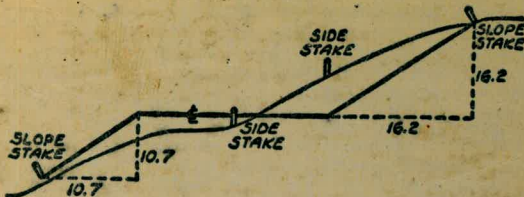


#753



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING  
SLOPE 1 TO 1. ROADWAY OF ANY WIDTH

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0
1	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	1
2	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	2
3	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	3
4	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	4
5	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	5
6	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	6
7	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	7
8	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90	8
9	9.00	9.10	9.20	9.30	9.40	9.50	9.60	9.70	9.80	9.90	9
10	10.00	10.10	10.20	10.30	10.40	10.50	10.60	10.70	10.80	10.90	10
11	11.00	11.10	11.20	11.30	11.40	11.50	11.60	11.70	11.80	11.90	11
12	12.00	12.10	12.20	12.30	12.40	12.50	12.60	12.70	12.80	12.90	12
13	13.00	13.10	13.20	13.30	13.40	13.50	13.60	13.70	13.80	13.90	13
14	14.00	14.10	14.20	14.30	14.40	14.50	14.60	14.70	14.80	14.90	14
15	15.00	15.10	15.20	15.30	15.40	15.50	15.60	15.70	15.80	15.90	15
16	16.00	16.10	16.20	16.30	16.40	16.50	16.60	16.70	16.80	16.90	16
17	17.00	17.10	17.20	17.30	17.40	17.50	17.60	17.70	17.80	17.90	17
18	18.00	18.10	18.20	18.30	18.40	18.50	18.60	18.70	18.80	18.90	18
19	19.00	19.10	19.20	19.30	19.40	19.50	19.60	19.70	19.80	19.90	19
20	20.00	20.10	20.20	20.30	20.40	20.50	20.60	20.70	20.80	20.90	20
21	21.00	21.10	21.20	21.30	21.40	21.50	21.60	21.70	21.80	21.90	21
22	22.00	22.10	22.20	22.30	22.40	22.50	22.60	22.70	22.80	22.90	22
23	23.00	23.10	23.20	23.30	23.40	23.50	23.60	23.70	23.80	23.90	23
24	24.00	24.10	24.20	24.30	24.40	24.50	24.60	24.70	24.80	24.90	24
25	25.00	25.10	25.20	25.30	25.40	25.50	25.60	25.70	25.80	25.90	25
26	26.00	26.10	26.20	26.30	26.40	26.50	26.60	26.70	26.80	26.90	26
27	27.00	27.10	27.20	27.30	27.40	27.50	27.60	27.70	27.80	27.90	27
28	28.00	28.10	28.20	28.30	28.40	28.50	28.60	28.70	28.80	28.90	28
29	29.00	29.10	29.20	29.30	29.40	29.50	29.60	29.70	29.80	29.90	29
30	30.00	30.10	30.20	30.30	30.40	30.50	30.60	30.70	30.80	30.90	30
31	31.00	31.10	31.20	31.30	31.40	31.50	31.60	31.70	31.80	31.90	31
32	32.00	32.10	32.20	32.30	32.40	32.50	32.60	32.70	32.80	32.90	32
33	33.00	33.10	33.20	33.30	33.40	33.50	33.60	33.70	33.80	33.90	33
34	34.00	34.10	34.20	34.30	34.40	34.50	34.60	34.70	34.80	34.90	34
35	35.00	35.10	35.20	35.30	35.40	35.50	35.60	35.70	35.80	35.90	35
36	36.00	36.10	36.20	36.30	36.40	36.50	36.60	36.70	36.80	36.90	36
37	37.00	37.10	37.20	37.30	37.40	37.50	37.60	37.70	37.80	37.90	37
38	38.00	38.10	38.20	38.30	38.40	38.50	38.60	38.70	38.80	38.90	38
39	39.00	39.10	39.20	39.30	39.40	39.50	39.60	39.70	39.80	39.90	39
40	40.00	40.10	40.20	40.30	40.40	40.50	40.60	40.70	40.80	40.90	40
41	41.00	41.10	41.20	41.30	41.40	41.50	41.60	41.70	41.80	41.90	41
42	42.00	42.10	42.20	42.30	42.40	42.50	42.60	42.70	42.80	42.90	42
43	43.00	43.10	43.20	43.30	43.40	43.50	43.60	43.70	43.80	43.90	43
44	44.00	44.10	44.20	44.30	44.40	44.50	44.60	44.70	44.80	44.90	44
45	45.00	45.10	45.20	45.30	45.40	45.50	45.60	45.70	45.80	45.90	45
46	46.00	46.10	46.20	46.30	46.40	46.50	46.60	46.70	46.80	46.90	46
47	47.00	47.10	47.20	47.30	47.40	47.50	47.60	47.70	47.80	47.90	47
48	48.00	48.10	48.20	48.30	48.40	48.50	48.60	48.70	48.80	48.90	48
49	49.00	49.10	49.20	49.30	49.40	49.50	49.60	49.70	49.80	49.90	49
50	50.00	50.10	50.20	50.30	50.40	50.50	50.60	50.70	50.80	50.90	50

Distance of slope stake from side or shoulder stake for any width roadway, slope 1 to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

U.S.C. & G. B.M. 21722  
1944



# MICROFILMED DIRECTIONS FOR USE OF TABLES

JAN 1 1903  
TABLE No. XIV

Distance of slope stake from side or shoulder stake for any width roadway, slope  $1\frac{1}{2}$  to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

TABLE No. VIII

To find Tangent and External for curve of any other degree, divide by degree of curve and add correction found in column of corrections. Degree of curve with a given I may be found by dividing tangent, (or external), opposite I by given tangent, (or external).

The distance from a point on the tangent to the curve is very nearly the square of the tangent length divided by twice the radius.

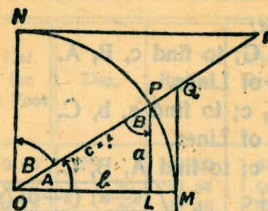


TABLE II  
TRIGONOMETRIC FORMULÆ.

$$\angle A = \angle MOP \quad \angle B = \angle PON = \angle OPL$$

$$R = OB = c = 1$$

$$\sin A = \frac{a}{c} = \frac{a}{1} = a = \cos B = LP$$

$$\cos A = \frac{b}{c} = \frac{b}{1} = b = \sin B = OL$$

$$\tan A = \frac{a}{b} = \frac{MQ}{OM} = \frac{MQ}{1} = MQ = \cot B = MQ$$

$$\cot A = \frac{NT}{ON} = \frac{NT}{1} = NT = \tan B = NT$$

$$\sec A = \frac{OQ}{OM} = \frac{OQ}{1} = OQ = \csc B = OQ$$

$$\csc A = \frac{OT}{ON} = \frac{OT}{1} = OT = \sec B = OT$$

$$\text{vers } A = \frac{LM}{OP} = LM = \text{covers } B = \ddagger$$

$$\text{covers } A = \frac{OP-LP}{OP} = OP-LP = \text{vers } B$$

$$\text{exsec } A = PQ = \text{coexsec } B$$

$$\text{coexsec } A = PT = \text{exsec } B$$

$$\sin \frac{1}{2} A = \sqrt{\frac{1-\cos A}{2}} \quad \cos \frac{1}{2} A = \sqrt{\frac{1+\cos A}{2}}$$

$$\sin 2A = 2 \sin A \cos A \quad \cos 2A = \cos^2 A - \sin^2 A$$

$$\text{Law of Lines} \quad \frac{\sin A}{a} = \frac{\sin B}{B} = \frac{\sin C}{C}$$

$$\text{Law of Cosines} \quad c^2 = a^2 + b^2 - 2ab \cos C$$

$$\text{Law of Tangents} \quad \frac{a+b}{a-b} = \frac{\tan \frac{1}{2}(A+B)}{\tan \frac{1}{2}(A-B)}$$



TABLE XIII—CORRECTIONS FOR TANGENTS AND EXTERNALS

These corrections are to be added to the approximate values, found by dividing the tangent, or external, for a 1° curve (Table VIII) by the degree of curve, in order to obtain the true tangents, or externals. Intermediate values may be obtained by interpolation.

FOR TANGENTS ADD

Central Angle	DEGREE OF CURVE															
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°		
10°	.03	.06	.09	.13	.16	.19	.22	.25	.28	.31	.34	.38	.42	.46		
15°	.04	.10	.14	.19	.24	.29	.34	.39	.45	.51	.53	.58	.63	.68		
20°	.06	.13	.19	.26	.32	.39	.45	.51	.58	.65	.72	.79	.84	.90		
25°	.08	.16	.24	.33	.40	.49	.58	.67	.75	.83	.90	.99	1.06	1.14		
30°	.10	.19	.29	.39	.49	.59	.69	.79	.89	.99	1.09	1.20	1.29	1.39		
35°	.11	.22	.34	.47	.58	.69	.79	.81	.92	1.04	1.29	1.42	1.54	1.68		
40°	.13	.26	.40	.53	.67	.80	.93	1.06	1.20	1.34	1.49	1.64	1.79	1.94		
45°	.15	.30	.44	.60	.76	.91	1.06	1.21	1.37	1.52	1.70	1.87	2.04	2.21		
50°	.17	.34	.51	.68	.85	1.02	1.19	1.36	1.54	1.72	1.91	2.10	2.29	2.48		
55°	.19	.38	.57	.76	.95	1.14	1.32	1.52	1.72	1.92	2.14	2.35	2.56	2.77		
60°	.21	.42	.63	.84	1.05	1.27	1.49	1.71	1.94	2.17	2.38	2.60	2.83	3.07		
65°	.23	.46	.69	.93	1.16	1.40	1.64	1.88	2.13	2.38	2.63	2.88	3.13	3.39		
70°	.25	.51	.76	1.02	1.28	1.54	1.80	2.06	2.33	2.60	2.88	3.16	3.44	3.72		
75°	.27	.56	.83	1.12	1.40	1.69	1.98	2.27	2.57	2.87	3.16	3.47	3.78	4.09		
80°	.30	.61	.91	1.22	1.53	1.84	2.15	2.46	2.78	3.10	3.44	3.78	4.12	4.46		
85°	.33	.66	1.00	1.33	1.68	2.02	2.36	2.70	3.05	3.40	3.77	4.14	4.55	4.89		
90°	.36	.72	1.09	1.45	1.83	2.20	2.57	2.94	3.32	3.70	4.10	4.50	4.91	5.32		
95°	.39	.79	1.19	1.55	2.00	2.40	2.80	3.20	3.61	4.02	4.40	4.85	5.38	5.83		
100°	.43	.86	1.30	1.74	2.18	2.62	3.06	3.50	3.95	4.40	4.88	5.37	5.85	6.34		
110°	.51	1.03	1.56	2.08	2.61	3.14	3.67	4.21	4.76	5.31	5.86	6.43	7.01	7.60		
120°	.62	1.25	1.93	2.52	3.16	3.81	4.45	5.11	5.77	6.44	7.12	7.80	8.50	9.22		

FOR EXTERNALS ADD

Central Angle	DEGREE OF CURVE															
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°		
10°	.001	.003	.004	.006	.007	.008	.009	.011	.012	.014	.015	.017	.018	.020		
15°	.003	.007	.010	.014	.018	.023	.027	.029	.032	.035	.039	.043	.047	.051		
20°	.006	.011	.017	.022	.028	.034	.038	.045	.051	.057	.063	.070	.076	.083		
25°	.009	.018	.027	.036	.046	.056	.065	.074	.083	.093	.106	.120	.127	.135		
30°	.013	.025	.038	.051	.065	.078	.090	.103	.116	.129	.149	.170	.179	.188		
35°	.018	.035	.054	.072	.086	.109	.131	.153	.175	.197	.213	.230	.247	.264		
40°	.023	.046	.070	.093	.117	.141	.172	.203	.234	.265	.277	.290	.315	.341		
45°	.030	.060	.093	.119	.153	.184	.216	.254	.289	.325	.351	.378	.411	.445		
50°	.037	.075	.116	.151	.189	.227	.266	.305	.345	.384	.425	.467	.508	.550		
55°	.046	.093	.142	.188	.236	.283	.332	.381	.420	.479	.530	.582	.641	.700		
60°	.056	.112	.168	.225	.283	.340	.398	.457	.516	.575	.636	.697	.774	.851		
65°	.067	.135	.204	.273	.343	.412	.483	.554	.625	.697	.771	.845	.922	1.01		
70°	.080	.159	.240	.321	.403	.485	.568	.652	.735	.819	.906	.994	1.08	1.17		
75°	.095	.182	.286	.363	.480	.578	.678	.777	.877	.977	1.07	1.18	1.29	1.39		
80°	.110	.220	.332	.445	.558	.671	.787	.903	1.02	1.13	1.25	1.38	1.50	1.62		
85°	.128	.259	.391	.524	.657	.790	.926	1.06	1.20	1.34	1.47	1.62	1.76	1.91		
90°	.149	.299	.450	.603	.756	.910	1.07	1.22	1.38	1.54	1.70	1.87	2.03	2.20		
95°	.174	.350	.522	.706	.895	1.06	1.25	1.43	1.62	1.80	1.99	2.18	2.38	2.58		
100°	.200	.401	.604	.809	1.01	1.22	1.43	1.64	1.85	2.06	2.28	2.50	2.73	2.96		
110°	.268	.536	.806	1.08	1.35	1.63	1.91	2.20	2.48	2.76	3.05	3.35	3.66	3.96		
120°	.360	.721	1.08	1.45	1.82	2.19	2.57	2.95	3.33	3.72	4.11	4.50	4.91	5.32		

INDEX

EL CAPITAN SPILL WAY X-SECT 1,2,3,4 ✓

FLAGS ON RIO CONTOUR 5-18 INCL.

EL CAPITAN SLIDE AREA. 65-68 INCL. ✓

EL CAPITAN RES. SILT SURVEY.

PROFILES OF RANGES 21-38

SKETCH OF RANGES 39

TRIANGULATION OF RANGE ENDS AND

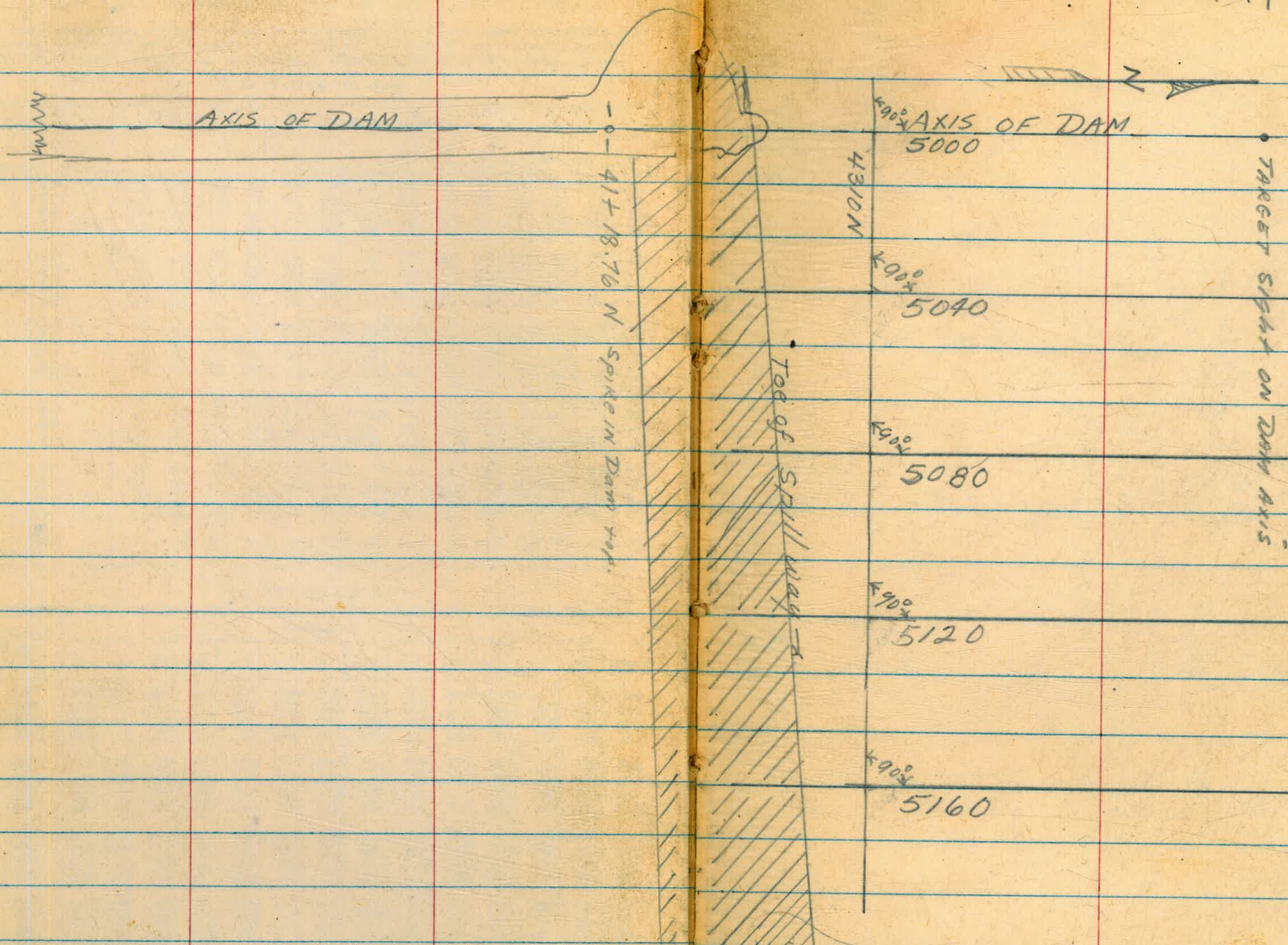
SECTION CORNERS FOUND  $\left\{ \begin{array}{l} 40-64 \\ 76-79 \end{array} \right. ✓$

LEVEL NOTES - BACK PAGES VOID



8-2-48 Baker  
Shipman I

# EL CAPITAN SPILL WAY





X-SECTION OF SPILLWAY FLOOR

8-2-48

Baker  
Shipman

2

5040E						
44'S	32'N	47.4N	66.6N	85.9'N	113.8	176.3N
ELEV. 719.8	720.7	729.0	731.0	740.2	740.5	778.75

5080E						
31'S	35'N	48.4N		80.8N	99'N	112.2
ELEV. 721.0	721.6	729.4		733.1	742.9	746.4
						173.9N
						782.9

43.0'N

5120E.						
18'S	42'N	59.6'N		93.7'N		168.2N
ELEV. 722.1	722.6	731.8		747.5		783.0

5160E.						
6'S	52N	69'N		88.7N		166.9'N
ELEV. 723.3	723.8	734.4		737.0		779.7

NOTE: ALL ELEV'S. ARE BASED ON U.S.C.S.  
ELEV. OF B.M. AT 4+85 BOT. OF SPILLWAY



8-2-48

Baker  
Shipman

3

LEVEL NOTES FOR EL CAPITAN  
SPILLWAY X-SECT.

5040 E AT 4310 N

Stadia Dist	Vert. $\angle$	Rod Read	Diff. ELEV.	Elev.	Cor. Hor. Dist.
B.M.	+ 6.10	$\pi$ 725.75		719.65	
44'S	0°00'	-6.0	-6.0	719.8	44'S
32'N	0°00'	5.19	-5.19	720.7	32'N
48'N	+6°20'	2.0	+3.26	729.0	47.4'N
69'N	+6°55'	3.0	+5.25	731.0	68.0 66.7'N
89'N	+10°51'	2.0	+14.45	740.2	85.9'N
118'N	+10°50'	7.0	+14.78	740.5	113.8'N
194'N	+17°39'	3.0	+53.00	778.8	176.3'N
B.M.			-6.10	719.65 = 719.65	

B.M ON SPILLWAY AT  
Sta. 4185 (U.S.G.S.)

5080 E AT 4310 N

B.M.	+ 7.02	$\pi$ 726.67		719.65	
31'S	0°00'	5.67	-5.67	721.0	31'S
35'N	0°00'	5.09	-5.09	721.6	35'N
49'N	+6°45'	3.0	+2.7	729.4	48.4'N
83'N	+7°19'	4.0	+6.4	733.1	80.8'N
102'N	+9°50'	1.0	+16.2	742.9	99'N
116'N	+10°26'	1.0	+19.7	746.4	112.2'N
194'N	+18°49'	3.0	+56.2	782.9	173.9'N
			-7.02	719.65 = 719.65	

B.M ON SPILLWAY AT  
Sta 4185 (U.S.G.S.)



LEVEL NOTES Cont.

5120E AT 4310N

stad. Dist.	Vert. $\Delta$	Rod. Read.	Diff. Elev.	Elev.	Cor. Hor. Dist.
B.M.	+8.08	7-727.73		719.65	
18'S	0°00'	5.63	-5.63	722.1	18'S
42'N	0°00'	5.09	-5.09	722.6	42'N
60'N	5°10'	1.3	+4.1	<del>723.6</del> 731.8	59.6'N
99'N	13°21'	2.49	+19.75	747.5	93.7'N
189'N	19°23'	3.92	+55.23	783.0	168.2'N
B.M.			-8.09	719.64 = 719.65	

B.M. ON spillway At Sta. 4185 (U.S.C.S.)

5160E AT 4310N

B.M.	+9.10	7-728.75		719.65	
6'S	0°00'	5.51	-5.51	723.3	6'S
52'N	0°00'	4.99	-4.99	723.8	52'N
70'N	6°36'	2.35	+5.64	734.4	69'N
90'N	6°51'	2.45	+8.21	737.0	88.7'N
184N	17°44'	2.92	+50.96	<del>779.7</del> 779.2	166.9'N
B.M.			-9.10	719.65 = 719.65	

B.M. ON spillway at Sta. 4185 (U.S.C.S.)



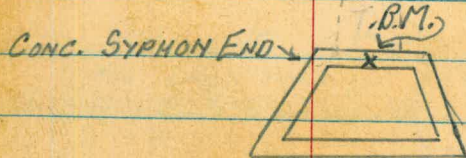
Very hot -110°+

SEPT. 10, 1948 LEONARD SHIPMAN WEST. 5

EL CAPITAN RESERVOIR, POINTS ON (210 DAM CONTOUR = 763.17 U.S.G.S. CONTOUR)

STARTED AT SOUTH END OF DAM AND GOING EAST ALONG SOUTH SIDE OF LAKE.

	+	H.d.	-	ELEV.	
R.M. ON DAM	5.51	775.18		769.67	
T.P.	+10.70	774.58	-11.30	763.88	ROCK
SET HOR #1.			-11.41	763.17	
T.P.	+1.10	762.97	-12.71	761.87	HUB
T.P.	+0.74	759.36	-4.95	759.62	ROCK
T.P.	+4.75	761.15	-2.96	766.40	HUB
T.P.	+12.08	768.23	-5.00	766.15	STEEL PROD BY ROCK
SET HOR #2.			-5.06	763.17	
← SET R.M.			-8.03	760.20	
	+2.09	762.23			
T.P.	+8.72	766.49	-4.46	757.77	HUB
SET T.B.M.			-7.29	759.20	
					LEONARD, SHIPMAN, WEST.
					Sept. 14, 1945
T.B.M.	+9.80	769.00		759.20	
SET HOR #3.			-5.83	763.17	
SET HOR #4.			-5.84	763.16	
T.P.			-3.66	765.34	
	+9.24	774.58			

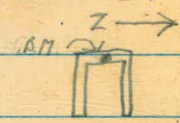


GOING SOUTH TO CHOCOLATE CREEK AREA.  
NAIL IN E. SIDE OF TELE. POLE

GOING NORTH ALONG EAST SIDE OF LAKE.



TOP OF CONC. SYPHON ON E. SIDE OF LAKE.



	+	H. d.	-	Elev.
		774.58		
			2.83	771.75
	+0.27	772.02		
			-8.84	763.18
			-0.27	771.75
	+10.23	781.98		
			-11.72	770.26
	+10.16	780.42		
			-11.88	768.54
	+5.40	773.94		
			-10.71	763.23
			-5.03	768.91
	+11.89	780.80		
ROCK ON RIDGE BY TUNNEL <sup>23</sup> OF OLD FLUME.			-2.83	777.97
				LEONARD SHIPMAN WEST.
			SEPT 15, 1948	
GOING EAST ALONG SOUTH SIDE OF "SOUTH FORK" OR KING RIVER ARM OF THE LAKE.				777.97
			-12.53	772.29
	+3.77	776.06		
			-12.88	763.18



THIS POINT SET BY BAKER'S PARTY IS  
 MARKED DAM ELEV. 210.1, WHICH EQUALS  
 U.S.G.S. ELEV. OF 763.27 AND WAS  
 CHECKED AT ELEV. 763.30 BY THIS PARTY.

B.M. SET ON NE. COR. OF EASTERN-MOST CONC.  
 STR. AT S. TERMINUS OF OLD FLUME SYPHON  
 ACROSS THE MOUTH OF SOUTH FORK.

LAKE

CONC. STR'S.

← SET B.M. ELEV. 775.69

FARTHEST EAST POINT ON S. SIDE KING CREEK.

	+	H.d.	-	ELEV.
		776.06		
T.P.			-2.79	773.27
	+2.96	776.23		
CHECK HOR #8.			-12.93	763.30
SET B.M.			-0.54	775.69
T.P.			-2.42	773.81
	+4.40	778.21		
T.P.			-3.18	775.03
	+3.59	778.62		
T.P.			-3.36	775.26
	+3.82	779.08		
T.P.			-3.45	775.63
	+3.28	778.91		
T.P.			-12.44	766.47
	+1.91	768.38		
SET HOR #9.			-5.21	763.17



FARTHEST E. POINT ON N. SIDE KING CREEK.  
 ON ROCK ON N. BANK OF S. FORK KING CREEK, NEAR  
 LOCATION OF POINT # 11.

	+	H. d.	-	ELEV.
		768.38		
SET HUB #10			-5.33	763.05
SET T.B.M.			-1.93	766.45
				LEONARD SHIPMAN WEST
				Sept 16, 1948.
B.M.				769.55
	+1.89	771.44		
SET HUB #16.			-8.27	763.17
SET HUB #15.			-8.27	763.17
T.P.			-8.58	762.86 ROCK.
	+3.97	766.83		
T.P.			-9.86	756.97 ROCK.
	+10.95	767.92		
T.P.			-12.46	755.46 ROCK
	+4.84	760.30		
T.P.			-2.92	757.38 ROCK
	+12.50	769.88		
SET HUB #14			-6.71	763.17
SET HUB #13			-6.71	763.17

HUB #13 USED AS T.P.



HURS #12 and #11 set by Baker and marked

Contour 210.0

CHECKED T.B.M. SET YESTERDAY, 0.25' LOW.

NOTE: SHOTS UP TO 5,000 FT. WERE TAKEN TODAY.

	+	H.d.	-	ELEV.
HUR #13				763.17
	+9.30	772.47		
CHECK HUR #12.			-9.39	763.08
CHECK HUR #11.			-9.44	763.03
CHECK T.B.M.			-6.30	766.17 = 766.45
				.28 ERROR
				LEONARD SHIPMAN WEST
				Sept. 17, 1948
CHECK WATER ELEV. AT DAM, TO				CHECK B.M.
B.M. SOUTH END OF DAM.				769.67
	+2.30	771.97		
T.P.			-12.95	759.02
	+0.63	759.65		
T.P.			-3.42	756.23
	+1.66	757.89 =		704.91 ON GAUGE.
		627.30 =		74.82 ON GAUGE
WATER SURFACE			-9.68	617.67
	+12.77	630.39		
T.P. ON STUMP			-0.28	630.11

TOOK READINGS AT TOP OF GAUGE ON S. SIDE  
OF TOWER AND PICKED UP AN H.d. AT BOTTOM.

WATER AT DAM.

AT N. END OF LAKE, TAKE OFF FROM WATER  
SURFACE TO CHECK B.M.



	+	H. d.	-	ELEV.
	+12.63	642.74		630.11
T.P. on rock			0.57	642.17
	+12.50	654.67		
T.P. Rock			-0.12	654.55
	+12.63	667.18		
T.P. HUR			-0.41	666.77
	+12.19	678.96		
T.P. Rock			-0.64	678.32
	+12.58	690.85		
T.P. Rock			-0.49	690.36
	+12.09	702.45		
T.P. Rock			-0.28	702.17
	+12.48	714.60		
T.P. Rock			-0.64	713.96
	+10.85	724.81		
T.P. Rock			-0.31	724.50
	+12.36	736.86		
T.P. Rock			-0.28	736.58
	+13.04	749.67		



	+	Hid.	-	ELEV.
T.P. Rock		749.67	-0.34	749.28
	+12.63	761.91		
T.P. Rock			-0.33	761.58
	+10.23	771.81		
CHECK T.P.M.			-5.65	766.16 =
				766.17 (PAGE 9)
				766.45 (PAGE 8)
	+12.98	779.14		
SET R.M.			-2.99	776.15
				LEONARD, BANNER
				Sept. 23, 1948. SHIPMAN, WEST.
R.M.	+6.36	782.51		776.15
T.P.			-11.40	771.11 Rock.
	4.65	775.76		
T.P.			-5.78	769.98
	+2.41	772.59		
Set #17.			-9.44	762.95
Set #18.			-9.59	763.00
T.P.			-6.94	765.45 Rock
	+0.61	766.06		

R.M. Painted yellow square on top of 3'x4'x4' ←  
 boulder, on north side of huge granite  
 boulder, on top of ridge at N.E. corner  
 of junction of San Diego River and South  
 Fork. About 50' west of telephone line  
 and 100ft. south of forestry fire road.

Sept. 23. Going north along the San Diego  
 River arm of the Reservoir. Taking level  
 shots across the Reservoir Basin in  
 order to avoid brush and rocky terrain



Sept. 23, 1948.  
LEONARD - BAKER T's 12.  
SHIPMAN - WEST - P.M.S.

that would require many short turns.  
Leeward running level with West as Podman,  
Baker on opposite side of canyon, running  
level with Shipman as Podman.  
EAST SIDE OF CANYON.  
WEST " " "

	+	H.S.	-	ELEV.	
		766.06			
T.P.			-8.10	757.96	ROCK.
	+8.25	766.21			
Set Hub #19.			-9.27	762.94	
Set Hub #20.			-9.22	762.99	
T.P.			-8.25	757.96	SAME AS ABOVE
	+5.99	763.95			
T.P. CHECK BAKERS			-8.78	755.22 = 755.18	(BAKERS)
← SET B.M.			-5.39	758.56	
					LEONARD - BAKER SHIPMAN - WEST
				758.56	
	+9.57	768.13			
(POINT 21 SET BY BAKER SEE PAGE)					SEE NEXT PAGE
SET HUB #22.			-5.18	762.95	HUB
	+2.98	765.93			
T.P.			-4.71	761.22	ROCK.
	+10.46	771.68			
Set Hub #23			-8.69	762.99	
Set Hub #24			-8.68	763.00	HUB

15' high  
HUGE PYRAMID SHAPED GRANITE BOULDER, LAYING  
← HALF ABOVE AND HALF BELOW THE HIGH WATER  
LINE ON THE WEST SIDE OF THE CANYON, MIDWAY  
BETWEEN POINTS 20 & 22. PAINTED B.M. WITH YELLOW  
PAINT.

Sept. 24, 1948







CLEAR - HOT.

Sept. 28, 1948

14.

LEONARD - BAKER  
SHIPMAN - WEST,

+ H.d. - ELEV.

LEONARD AND WEST CARRIED LEVELS UP EAST	T.R.M.	6.49	766.70		760.21 (PAGE 13)	
SIDE OF RIVER, SET POINT #29, AND TURNED	T.P.			-11.44	755.26	ROCK
INTO THE U.S.C. & M.S. R.M. <sup>#2927</sup> WHICH IS LOCATED		+12.55	767.81			
AT THE INTERSECTION OF THE TRUCK TRAILS	T.P.			-4.32	763.49	HUB
FROM RAMONA VALLEY AND FROM THE DIVERTING		+7.31	770.80			
DAM. THE DIVERTING DAM IS ABOUT .8 MILE	Set Hub #29			-7.80	763.00	HUB
UP STREAM FROM THE R.M.		+5.63	768.63			
	T.P.			-11.78	756.85	ROCK
BAKER AND SHIPMAN CONTINUED THEIR SEPARATE		+0.17	757.02			
LINE OF LEVELS UP THE WEST SIDE OF THE	T.P.			-11.72	745.30	ROCK
RIVER AND SET POINT #30, THEN TURNED INTO		+6.48	751.78			
THE ABOVE R.M.	T.P.			-7.40	744.38	ROCK
		+9.50	753.88			
	T.P.			-0.56	753.32	HUB
		+10.47	763.79			
	T.P.			-0.66	763.13	ROCK
		+12.10	775.23 <sup>x</sup>			
	T.P.			-0.50	774.73	ROCK
		+11.45	786.18			



Sept. 28, 1948,

15.

+

H.S.

-

ELEV.

786.18

T.P.

-12.29

773.89

Rock

+1.75

775.64

USC&amp;GS #U722 Set 1944.

B.M.

-7.27

768.37



Sept. 23, 1948  
 BAKER-LEONARD X 16.  
 Shippiam - West - Rod

clear - warm

	+	Σ	-	ELEV.
B.M.	6.36	782.51		776.15
T.P. <sup>#1</sup>			11.40	771.11 Rock
	4.65	775.76		
T.P. <sup>#2</sup>			5.78	769.98
Baker + Shippiam started at this point.	4.70	774.69		
Set target #17			11.68	763.00
T.P. <sup>#1</sup>			8.47	766.21
	0.90	767.11		
T.P. <sup>#2</sup>			9.32	757.79
	7.34	765.13		
Set target #19			2.16	762.97
	2.86	765.83		
check on target #20	T.		2.94	762.89
	T.P. <sup>#4</sup>		10.65	755.18
Sept. 24 Baker Shippiam	10.45	765.63		
Set target #21	Target		2.63	763.00
	T.P. <sup>#5</sup>		10.43	755.00
B.M. on Rock	7.72	762.72		
	T.P. <sup>#6</sup>		1.21	761.51



Set target #25  
" " 24

	+	π	-	ELEV
	7.78	769.29		761.51
			6.29	763.00
			6.29	763.00
T.P.#7			9.43	759.86
	10.39	770.25		
T.P.#8			1.50	768.75
	4.45	773.10		
			10.10	763.00
			10.10	763.00
			12.00	761.10

set target #28  
set target #27

T.B.M on wooden Hub

Sept. 28, 1948, Baker π, Shipman-Rod

	+	π	-	ELEV
	1.24	762.34		761.10
T.P.#1			10.62	751.72
	7.95	759.67		
T.P.#2			7.41	752.26
	10.22	762.48		
			9.48	753.00
T.P.#3			6.52	755.96
	6.48	762.44		

Set target #30, 10' too low-



	T	T	T	ELEV
		762.44		
T.P.#4			0.84	761.60
	2.13	763.73		
T.P.#5			12.56	751.17
	2.17	753.34		
T.P.#6			3.76	749.58
	10.20	759.78		
T.P.#7			1.80	757.98
	12.42	770.40		
T.P.#8			3.83	766.57
	12.74	779.31		
T.P.#9			2.55	776.76
	12.16	788.92		
T.P.#10			12.87	776.05
	2.20	778.25		
T.P.#11			10.17	768.08
	7.61	775.69		
U.S.G.S # U 722 see 1944			6.92	768.77

Don Leonard's ELEV. on same bench 768.37 against 768.77 of BAKERS

see description in Leonard's notes as to location of U.S.G.S. Bench # U 722



SEPT. 30, 1948.

LEONARD T. WEST, JR. 19.

EL CAPITAN RESERVOIR. NORTH END OF LAKE.

PROFILE OF LINE FROM PT. #29 TO POINT #30.

DISTANCES BY STADIA. ELEV. BY LEVELS.

STATION	+	H. S.	-	ELEV.	REMARKS
0+00	1.09	764.09		763.00	No. #29
1+00			-9.7	754.4	
1+64			-11.0	753.1	TOP OF BANK
1+82 T.P.			-13.01	751.08	HOB.
1+98 T.S.	+1.64	752.72			
2+09			-8.1	744.6	EDGE OF ROAD
2+19			-8.3	744.4	"
2+35 T.P.			-11.95	740.77	HOB.
2+44 T.S.	+0.46	741.23			
2+60			-9.1	732.1	
2+80			-13.5	727.7	RIVER BED
3+04			-14.2	727.0	"
3+12			-11.0	730.2	TOP RIVER BANK
3+20			-9.8	731.4	
3+96			-4.3	736.9	
T.P. SAME AS ABOVE.			-0.46	740.77	
2+25 T.S.	+6.62	747.39			



## PROFILE FROM Pt. 29 TO Pt. 30, CONT'D.

STATION	+	H.d.			
2+25 T.S.		747.39			
4+61			-11.2	736.2	HEAVY BRUSH
5+19			-10.8	736.6	BOTTOM SAND BAR
5+45			8.5	738.9	TOP SAND BAR
5+85			-10.4	737.0	
6+41			-10.4	737.0	
6+65			-9.3	.1	
6+63 T.P.			-9.36	738.03	HOB.
8+61 T.S.	+11.08	749.11			
7+40			-10.3		
7+85			-11.7		
8+50			-7.4		
8+87 T.P.			-1.13	747.98	TOP OF BANK HOB.
10+25 T.S.	+11.90	759.88			
9+90			9.1		TOE OF SLOPE
CHECK BANKERS Pt. 30			-7.10	752.78 = 753.0	(BANKERS)
10+39 T.P.			-1.80	758.08	HOB.
10+71 T.S.	+11.11	769.19			
10+65 RESET Pt. 30			-6.16	763.03	WHITE TARGET HOB.
CHECK 0+00 HOB. (LONG SIGHT)			-6.14	763.05 = 763.00	



EL CAPITAN RES.  
PROFILE OF RANGE LINES FOR  
SILT SURVEY  
MAG BEARING N 20° E

DEC. 2 1950  
DEATY  
LEONARD  
WELKER

T BERGER 29611  
VERT ARC = +0°03' INDEX ERROR NOTE!  
MAG. VAE = 14°30'

21.

PT No 8 To PT No 11

STATION		ELEV
PT # 8 } 0+00		763.30 (300 PA 7)
1+21 <sup>31</sup>	Slope Dist Vert Z (125.00 @ -14°00' =) 30.14	733.16
2+41 <sup>19</sup>	(125.00 @ -16°30' =) 35.40	697.76
3+49 <sup>28</sup>	(119.00 @ -22°12' =) 48.69	649.07
4	6.60	655.67
3+60	12.5	643.2
3+90	16.8	638.9
4+05	19.5	636.2
4+25	19.7	636.0
4+45	18.3	637.4
4+65	17.7	638.0
4+91	19.0	636.7
4+93	21.3	634.4
5+15	19.0	636.7
5+38	17.3	638.4
+60	13.8	641.9
6+00	13.7	642.0
+50	12.3	643.4
7+00	7.7	648.0

STATION		ELEV.
7+12 <sup>80</sup>	655.67	5.2
8+34 <sup>59</sup>	125.00 @ +12°58'	28.15
9+55 <sup>26</sup>	125.00 @ +15°07'	22.70
10+08 <sup>11</sup>	56.00 @ +19°11'	18.45
11+29 <sup>90</sup>	126.15 @ +15°03'	32.86
PT # 11		762.63 = 763.03

(This Range is West 85°  
and very near parallel to 18"  
Steel pipe siphon on trestle)

NOTE: Hubs mentioned & set in foregoing notes (pages 5-18) were found, and replaced with 18" 20" lengths of 2" pipe set 0.50' above the elevation of original hubs. Pipe painted yellow & flagged with Lath & white flag for triangulation.

(see Note page 38)



DEC. 5 1950

EL CAPITAN RES  
PROFILE OF RANGE

MAG BEARING S 75°30' W

PT. N° 17 to PT. N° 18

STATION		Elev
PT #17		762.95 (pg 11)
0+00		
0+89 <sup>23</sup>	Slope Dist HI. Vert 3 Inter. mediate 95.00 @ +20°07'	32.40 730.35
1+91 <sup>10</sup>	196.00 @ -12°53'	43.54 719.41
3+78 <sup>84</sup>	200 @ -20°13'	68.95 650.46
	4.3 654.76	650.46
3+89	Road {	9.0 645.8
4+00		9.2 645.6
+21		14.0 640.8
5+36		13.8 641.0
5+53		17.1 637.7
5+84		15.5 639.3
6+12		14.6 640.2
6+65		13.4 641.4
7+35		15.1 639.7
7+75		16.2 638.6
8+17		19.7 635.1
8+37		13.0 641.8
8+50		14.8 640.0
8+75		16.3 638.5
8+96		21.7 633.1

Mild  
BENTY  
LEONARD  
WELKER

22

STATION	654.76	Elev.
9+05	22.7	632.1
9+50	21.3	633.5
10+00	20.4	634.4
10+10	21.4	633.4
10+34	21.4	633.4
10+60	3.2	651.6
10+66	0.9	653.56
12+09 <sup>53</sup>	147.70 @ +13°36'	34.86 688.72
14+06 <sup>12</sup>	200 @ +10°33'	36.79 725.51
15+03 <sup>52</sup>	104.45 @ +21°07'	37.72 763.23 763.00
PT. #18		



DEC. 5 1950

FAIR

23

EL CAPITAN RES  
PROFILE OF RANGEMAG. BEARING N 67° 30' W  
PT No 19 to PT No 20

STATION			ELEV.
PT No 19			762.94 (See pg 12)
0+00	Slope Dist - HI. Vert. & Rod		
1+97.14	200. @ -9° 45'	33.70	729.2
2+65.97	180.30 @ -21° 24'	65.60	663.6
3+45.07	± 60 668.2		663.6
3+56.02	(-25.)	+10.5	678.7
	(-9.0)	4.9	663.3
3+86		16.9	651.3
4+34		17.1	651.1
4+40		19.6	648.6
4+54		19.7	648.5
4+60		17.1	651.1
4+89		16.6	651.6
5+34		17.0	651.2
5+43		15.8	662.4
5+67		11.4	656.8
6+53		12.0	656.2
6+72		10.7	657.5
6+87		11.8	655.4
7+80		9.7	658.5
7+89		9.2	659.0

STATION		Elev.
8+00	668.2	658.1
9+00	10.1	659.2
9+33	9.0	658.6
9+48	9.6	659.2
9+62	9.0	658.2
9+76	10.0	659.0
9+91	Tamarac Brush 8.10 high	9.2
10+10	10.6	657.6
10+55	9.2	659.0
10+68	10.3	657.9
11+05	9.4	658.8
11+10	9.7	658.5
11+50	3.5	664.7
11+56	0.3	667.9
12+30 <sup>20</sup>	74.20 (86.0 @ +30° 19')	43.48
12+71 <sup>29</sup>	116.20 (145.0 @ +37° 17')	87.94
	165.2 @ +36° 16'	97.84
	(-2.5)	-2.50
12+89 <sup>11</sup>	95.24	763.14 = 762.99
PT = 20		



EL CAPITAN RES  
PROFILE OF RANGE

MAG. BEARING N 80° W  
PT N° 21 to PT N° 22

DEC 6, 1950  
BEATTY  
LEONARD  
WELKER

Fair & Warmer.

24

STATION		ELEV.	Station	686.75	Elev
PT # 21		763.00	9+83	20.3	666.5
0+00	Slope Dist. = HI. Vert. x	See pp. 13	10+00	21.3	665.5
1+95.11 197.53	200.0 @ -12° 45'	43.97	10+65	199	666.9
2+72.64	(Inter. 80.0 @ -14° 20') inter. 100.0	19.74	11+10	21.0	665.8
1+99.03	201.0 @ -7° 58'	27.68	11+55	25.0	661.8
3+94.19	(on a large Boulder)	27.68	11+98	24.0	662.8
P	4.45	695.80	12+32	15.7	671.1
3+90.2		10.2	12+61	14.9	671.9
4+09.2		15.9	12+70	16.3	670.5
P			12+92	12.5	674.3
5+00		10.2	13+24.08	4.95	681.8
+50		12.1	15+19.11		
6+00		13.1	16+49.81		
+50		13.6	PT N° 22		
7+00		14.0			
7+51		14.3			
7+81		17.7			
8+08	Brush 10-12	17.8			
8+26	High.	15.3			
9+10		14.7			
9+33		19.5			
9+60		14.5			

200.00 @ +12° 45' 44.31 726.11  
135.65 @ +15° 29' 36.33 762.44 = 763.00



DEC. 7, 1950

EL CAPITAN RES.  
PROFILE OF RANGEFair & Cooler  
BEATTY  
LEONARD  
WELKER

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STATION	PT. N° 11 + N°	to PT. N° 12	MAG. BEARING 57° W	Elev	TRANSIT N° 2	300.00 RT.	PT. #11	WATER EL. 628.78 - Gage = 75.8 See page 9.		
0+00	5.0	768.03		763.03	763.03					
1+10	Stadia Dist 120.00	130	Vert. x -16°45'	46.0	722.0	7+31 Edge Water	Shot N° N° 0.	Horiz x 67°41'	Depth. By Sounding 0.0	Elev. 628.8
2+55	270.00	120	-13°25'	72.8	695.2	10+43	1.	73°57'	6.3	622.5
3+11	325.00	120	-13°20'	89.5	678.6	11+34	2.	75°11'	6.5	622.3
3+22	340.00	120	-13°35'	89.5	678.5	13+84	3.	77°26'	14.3	614.5
3+40	360.00	120	-13°25'	93.0	675.0	12+73	4.	76°44'20"	13.0	618.8
3+51	370.00	110	-12°57'	91.6	676.4	13+40	5.	77°23'	15.0	613.8
3+60	380.00	110	-13°03'	94.3	673.7	14+68	6.	78°27'	6.0	622.8
4+44	464.00	110	-12°06'	10.6	657.4	14+72	7.	78°29'	3.5	625.3
4+84	504.00	110	-11°55'	113.0	655.0	14+83 Edge Water	8.	78°34'	0.0	628.8
5+05	525.00	110	-11°25'	113.0	655.0	15+08	9.	Transit 2 Horiz 8 78°25' - 4°34'	119.1	658.9
5+70	590.00	100	-10°53'	119.0	659.0	15+38	10.	78°58' - 3°28'	91.8	676.2
5+85	602.00	100	-10°57'	122.0	646.0	15+76	11.	79°13'30" - 2°30"	67.4	700.6
5+90	610.00	100	-10°37'	120.0	648.0	16+07	12.	79°25'30" - 1°40"	45.3	722.7
6+30	645.00	100	-9°32'	115.5	652.5	16+55	13.	79°13'30" - 0°42"	18.8	749.2
6+90	710.00	100	-9°25'	124.00	644.0	16+62	14.	79°26' - 0°28'	12.1	757.9
					16+75 1/2 PT. 12		15.	79°51' Horiz	5.0	763.03

79°51'



DEC. 7 1950

26.

EL CAPITAN RES  
PROFILE OF RANGE

PT # 7 to PT # 13 MAG Bearing N 32° 45' W

PT # 7	5.10	768.28		ELEV.		TRANSIT N° 2	250.00	LT	PT # 7	ELEV
0+00	Stadia Dist	Red	VERT. Z.	- Rod		Shot No	Horiz X	Depth		
				763.18		3+84				628.8
						Edge WATER - N° 0	56° 55'	0.0		622.8
						3+90		6.0		605.3
0+30	30.0	13.0	-4° 50'	15.5	752.8	4+91	1. 63° 01' 30"	23.5		
0+31	32.0	13.0	-9° 02'	18.0	750.3	5+615	2. 66° 00'	19.8		609.0
0+53 <sup>5</sup>	56.0	13.0	-12° 08'	24.5	743.8	6+50 <sup>4</sup>	3. 68° 58' 30"	19.5		609.3
0+93	100.0	13.0	-15° 20'	38.5	729.8	6+995	4. 70° 20'	6.0		622.8
						4+35	60° 07'	20.0		608.8
1+60	173.0	13.0	-16° 25'	60.0	708.3	4+53 <sup>8</sup>	5. 61° 09'	19.5		609.3
						7+14	Horiz X Transit	Vert. Z. Transit		
1+66	181.0	13.0	-16° 54'	63.2	705.1	WATER Edge	6. 70° 42' 30"	11° 05'	13.9, 2=629.1	628.8
1+90	207.0	13.0	-16° 36'	69.0	699.3	7+65 <sup>6</sup>	7. 71° 55'	-9° 08'	122.4	645.9
2+51	275.0	13.0	-17° 13'	90.7	677.6	8+21	8. 73° 04'	-7° 06'	101.5	666.8
3+12	343.0	13.0	-17° 45'	112.5	655.8	8+65	9. 73° 58'	-5° 48'	87.1	681.2
3+20	354.0	13.0	-18° 23'	119.0	649.3	9+03	10. 74° 31' 30"	-5° 01'	78.5	689.8
3+36	370.0	13.0	-17° 36'	119.0	649.3	9+725	11. 75° 35'	-3° 57'	66.3	702.0
3+84	427.0	13.0	-18° 17'	139.5	628.8	10+04 <sup>6</sup>	12. 76° 01' 30"	-3° 12'	55.3	713.0
						10+84	13. 77° 01'	-2° 08'	39.4	728.9
						10+90	14. 77° 05'	1° 56'	35.8	732.5
						12+14	15. 78° 22'	0° 53'	17.7	750.6
						12+16	16. 78° 23'	0° 43'	14.2	764.1
						12+445 PT 13	16. 78° 38' 30"		5.10	763.18



DEC 11, 1950

Fair & Warmer  
BEATTY  
LEONARD  
WEST  
WELKEE

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EL CAPITAN RES  
PROFILE OF RANGE

Water Elevation 628.54  
GAUGE 75.36

PT. No 6 to No 14 Mag Bearing N 64° W

TRANSIT No 2 - 200' LT PT No 6

PT No 6	50	768.23		763.23	3+26	Edge Horiz	58° 29'	Depth	Elev.
0+00					12 from water				
					4+15		64° 16'	25.0	603.5
0+42.5	47.13	-18° 16'	27.0	741.2	4+72		67° 03'	38.0	590.5
1+97	214.13	-16° 34'	71.5	696.7	5+69		70° 39'	37.5	591.0
2+55	280.13	-17° 30'	93.0	675.2	6+49		72° 53'	39.5	589.0
3+27	360.13	-17° 51'	118.0	650.2	7+81		75° 38'	20.0	608.5
3+39				628.5	8+93		77° 23'	20.1	608.4
3+49				624.5	9+59		78° 13'	23.8	604.7
					10+04		78° 44'	21.0	607.5
					11+26		79° 56'	20.0	608.5
These shots could not be seen from PT. No 6 so were taken by Stadia from No 14					12+68		81° 02'	19.3	609.2
					14+47		82° 08'	18.2	610.3
					15+12		82° 28'	12.2	616.3
					15+20		82° 36'	8.8	619.7
27+25	570.130	-13° 39'	26.1	741.4	15+96	10' out	82° 54'	10.0	618.5
					16+06	Edge Water	82° 54' 0 - 5° 02'	139.7	628.5
27+15	690.130	-15° 53'	31.4	736.1	16+94		83° 16' 0 - 3° 54'	114.0	654.2
					17+53		83° 30' 0 - 2° 56'	88.4	679.8
26+72	1140.130	-14° 21'	40.3	727.2	18+21		83° 44' 13' - 1° 45'	67.0	701.2
					18+82		83° 58' 0 - 1° 22'	43.3	724.9
22+60	587.100	-7° 19'	79.5	688.0	19+58		84° 10' 13' - 0° 37'	33.1	735.1
21+99	586.100	-6° 47'	82.0	695.5	27+13		85° 47' 13' - 0° 29'	33.5	734.7
21+09	675.130	-4° 54'	70.5	697.0	27+45		85° 50' 0 - 0° 26'	18.4	749.8
20+56	725.100	-3° 08'	49.7	717.8	27+79		85° 53'	5.2	763.03 - 763.17
20+41	738.130	-2° 15'	42.0	725.3					
19+89	740.130	-1° 24'	32.3	735.2					
19+59	720.130	-1° 22'	32.5	735.0					



Dec. 11, 1950

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EL CAPITAN RES  
PROFILE OF RANGE

PT N<sup>o</sup> 5 to PT N<sup>o</sup> 2 MAG. Bearing N 77° 45' W

Transit N<sup>o</sup> 2 - 150. RT 10+28<sup>54</sup>

STATION	Elev.	STATION	Depth	ELEV.
PT N <sup>o</sup> 5	495 768.13	13+39	6' OUT	622.5
0+00	STADIA Red Vert. x	13+78	45' OUT Horiz. x T <sup>o</sup> 2	619.7
0+19	21. 13. -17° 55'	14+53	1 70° 32'	612.3
1+45	154. 13. -13° 53'	14+96	2 72° 13'	611.5
1+94	Slope Dist 200 -14° 08'	15+37	3 73° 34'	611.4
	5.05 719.56	15+71	4 74° 33'	614.5
3+32	139. 13. -2° 24'	16+29	5 75° 59'	611.5
3+31	T 52 706.0	16+99	6 77° 23'	605.5
3+71	42. 13. -14° 00'	17+68	7 78° 32'	606.3
4+06	79. 13. -12° 28'	18+87	8 80° 05'	601.0
		19+65	9 80° 54'	597.1
197.40		20+32	10 81° 30'	587.5
5+28 <sup>4</sup>	200 -9° 18'	20+63	11 81° 45'	587.1
	153 679.95	21+26	12 82° 13'	584.5
5+68 <sup>4</sup>		21+97	13 82° 41'	586.8
		22+44	14 82° 58'	593.0
7+12 <sup>4</sup>		22+99	15 83° 16'	606.5
P	11.26 685.31	23+25	16 83° 24'	618.5
204 Horiz		23+49	6' OUT 16 83° 33'	625.5
7+32 <sup>4</sup>		23+55	W.E. -2° 55' 0	628.3
374		24+09	83° 48'	-205' 0 48.6 646.1
9+02 <sup>4</sup>		24+76	84° 05'	-101' 0 -24.4 670.3
P	948 694.73	25+49	84° 22'	+0° 15' 0 +8.0 702.7
460		26+30	84° 39'	+1° 51' 13. +40.1 734.8
9+88 <sup>4</sup>		26+61	84° 45'	+1° 38' 0 +48.0 742.7
500.14		28+27 <sup>4</sup>	85° 14'	+2° 33' 13. +68.7 763.43 =
10+28 <sup>54</sup>	T 5.3 694.73	PT. #2		763.17
49				
10+775				
12+285	205. 13. 8° 04'			
13+33.	312. 13. 9° 55'			
	Water's Edge			



Dec 11 1956

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EL CAPITAN RES  
PROFILE OF RANGE

STATION	PT N° 4 To	PT N° 3	Mag Bearing	N 62° W	Elev
PT # 4)	outside				763.16
0+00	edge road	Slope Dist	Vert %		
1+27.31		130	-11.24	26.33	736.83
	52.5	742.08			736.83

Transit N° 2 150' LT 1+27.31

	T # 2	T # 1	Red Vert %		
	Horiz %				
2+52.2	39° 54'	13'	-19° 50'	58.1	684.0
3+14	51° 12'	13'	-20° 10'	81.3	660.8
3+53.4	56° 26'	12'	-18° 38'	89.2	652.9
4+11.2	62° 09'	13'	-15° 14'	90.0	652.1
4+51	65° 09'	13'	-11° 48'	80.4	661.7
4+95	67° 49'	0'	-9° 17'	59.8	682.3
6+36.5	69° 52'	0'	-5° 31'	48.7	693.4
8+10.5	77° 37'	0'	+0° 09'	+2.4	744.5
10+55.2	80° 49'	0'	+1° 16'	21.31	763.39 =
PT # 3					763.16



EL CAPITAN RES.  
PROFILE OF RANGE

Dec 12, 1951  
Beatty T  
Leonard T  
Wright ch  
Walker boat

21-579-1

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PT. N° 1 To PT N° 16 Mag Bearing N 19° 30' E

Water Elev 628.56  
GAUGE 75.58

PT N°1	0.0	763.17	-	763.17
0+00				
0+09			9.9	753.3
0+17 <sup>92</sup> (Horiz)			10.3	752.9
0+29 <sup>84</sup> (Horiz) T			vert. $\times$ 5.35 +8°22' = 4.59	9.85 753.32
0+29 <sup>84</sup>	5.35	758.67		753.32

Transit #2 100' LT 0+17<sup>92</sup>

758.67

Horiz  $\times$  T #2

	Depth	Elev.
2+76	9.8	618.8
3+01	19.0	609.6
3+20	28.3	600.3
3+37	46.0	582.6
4+04	54.9	573.7
4+60	63.1	565.5
5+27 <sup>6</sup>	52.7	575.9
5+98	49.6	579.0
6+86	55.0	573.6
7+48	37.0	591.6
8+17	26.8	601.8
8+71	21.0	607.6
9+16 <sup>5</sup>	13.0	615.6
9+31 <sup>0</sup>		
EDGE WATER	83°45'	Vert $\times$ T #1 red red -8°09' 0 -129.8 629.0 - 628.6
9+85 <sup>6</sup>	84°06'	-5°56' 0 -99.6 659.1
10+22 <sup>7</sup>	84°19'	-5°34' 0 -98.5 660.2
10+66	84°33'	-4°01' 0 -72.4 686.3
10+96	84°42'	-2°31' 13 -59.1 699.6
11+06	84°45'	-2°39' 13 -62.1 696.6
11+61	85°00'	-2°06' 13 -54.2 704.5
12+13	85°13'	-0°56' 0 -18.35 740.3
12+47 <sup>42</sup>	85°21'	+0°09' 0 +4.76 763.03
PT N°16		763.17

Horiz $\times$ T #2	STADIA DIST	Red Vert $\times$		
0+81	62	13-25°21'	37.0	721.6
1+20	45°41'	113	13-26°31'	58.5 700.1
1+25	57°32'	184	13-26°45'	86.5 672.1
2+12	62°43'	228	13-26°49'	104.5 654.1
2+59 <sup>5</sup>				
Water edge	67°31'	289	13-27°05'	130.0 628.7



EL CAPITAN RES  
PROFILE OF RANGE

DEC. 12 1950  
Same Party

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PT N°2 STATION	To +	PT N° 15 HI	Nleg Bearing ROD	N 3°00' W	ELEV
PT N°2	5.10	768.27			763.17
0+00					763.17
0+04			1.0		762.2
0+11			10.6		752.6
0+38	Side Obs	rod	12.6		750.6
0+90 <sup>93</sup>	74.14	5.10	-16°55'	26.67	741.60
	4.75	746.35			741.60

(74<sup>14</sup> @ 16°55')

	Stadia	Rod	Vert. X			
1+25	35.	13.	-8°57'	18.3	725.1	
1+80	102.	13	-20°38'	46.6	696.8	
2+24	160	13.	-24°06'	72.5	670.9	
2+59	206.	13.	-25°29'	93.0	650.4	
3+08	+9 inches 0.5 WE	266.	13	-25°40'	113.0	633.4
3+14 WATER EDGE		277.	16	-26°17'	118.0	628.4

STATION	Transit N° 2	150.	LT.	0+90 <sup>93</sup>	Depth.
	Horiz				
3+26	12' out from WE				12.0 616.6
3+48	(11)	59°45'			34.3 594.3
4+06	(10)	64°36'			42.0 586.6
5+23	(9)	70°53'			52.1 576.5
5+92	(8)	73°22'			47.0 581.6
6+67	(7)	75°25'			48.2 580.4
8+05	(6)	78°09'			58.0 570.6
8+90	(5)	79°22'			53.0 575.6
9+85	(4)	80°29'			32.5 596.1
10+37	(3)	81°00'			24.1 602.5
11+36	(2)	81°50'			11.0 617.6
11+76	(1)	82°08'			3.0 625.6
12+072 Edge WATER		82°21'	rod Vert. X		0 -6°05' 117.7 628.7
12+67		82°44'			0 -5°23' 109.5 636.9
14+14		83°52'			0 -3°04' 69.35 677.0
14+94 <sup>5</sup>		83°54'			0 -1°31' 35.5 710.9
15+80 <sup>7</sup>		84°15'			0 -0°31' 11.7 734.7
16+912 PT 15		84°28'30"			0 +0°32' 16.2 762.6 763.17



EL CAPITAN RES.  
PROFILE OF RANGE

Dec. 12 1950  
Same Party

32

STATION	PT No 10 +	To No 9 H.I.	Mag Bearing	5° 2' 45" W Rod	Elev.
PT #10 0+00	T 5.0	768.05			763.05
1+32.50		135. 5.0	-11° 04'	30.80	737.25
1+53.85		160. 5.0	-15° 59'	48.92	719.13
1+81.82	T	190. 5.0	-16° 54'	60.08	707.97
6 1+87.8	5.3	713.27		6.0	707.97
17 2+04.8				9.0	704.3
3+26.75	T	150. 5.3	-15° 01'	44.04	669.23
	5.3	674.53			669.23
-92.0 2+34.75				56	668.9
67.25 3+94.40		68. 5.3	-5° 54'	12.43	662.10
2.0 2.5 lower				14.9	659.6
3+96.4					
1 0 1 9 4+28.15		102. 5.3	-6° 23'	16.55	658.0
1.0 4.0 higher				12.53	662.0
4+29					
1 3 4 8 5 4+61.60		135. 5.3	-2° 43'	11.58	662.95
19 9 5 8 5+26.33	T	200. 5.3	+3° 20'	7.67	682.20
1 5 0 . 9 7	5.1	687.30			682.20
7+13.30		200. 5.1	+20° 45'	65.92	753.22
21.9 Horiz 7+34.20		5.1	+21° 01'	75.35	762.65
PT No 9					= 763.17



EL CAPITAN RES.  
PROFILE OF RANGE

DEC. 13, 1950

BEATTY  
LEONARD  
WEST  
WELKER

T Berger #29611  
Index Error +0'04" NOTE!

33.

STATION	+	HI			Elev.				
PT N°23	5.15	768.14			762.99	1315	686.94		
0+00			Slopes Dist	Rod	Vert X	200			
0+50				17.7	750.44	1375			
0+93.5		96.	5.15	-13°01'	741.4	1595			
1+63.92		170.	5.15	-15°26'	717.94	69			
2+00.82	495	722.89			717.94	1764.2	5.25	686.94	681.69
2+30.46		40.	495	-22°43'	702.54		180.	5.25	+11°22'
2+30.46			(Rock Wall)	+3.5	696.67	-28	5.15	722.52	30.43
2+30.46	66.54	71.	495	-20°29'	693.17	149.75		29.	5.15
2+64.67	100.75	105.	495	-16°25'	688.38	149.75		29.	5.15
2+79.21	115.29	120.	495	-16°10'	684.66	149.75		29.	5.15
3+60.63	196.71	200.	495	-10°28'	681.84	149.75		29.	5.15
3+07.6	-53.	510			686.94				
3+13.6	-41.								
3+57.6	-3.								
3+65	145								
3+82	115								
3+95	134.5								
4+20	159.5								
4+32	171.5								
4+83	22.5								

MAIN CHANNEL

(water flowing)

7+50.10  
162.57  
495  
+12°39'

PT N°26

762.28  
763.00



EL CAPITAN RES  
PROFILE OF RANGE

DEC 13 1950

BEATTY TN  
LEONARD RES  
WEST CL  
WELKER P

T Berger # 2961  
Index Error +0.04

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STATION	PT N°25 To N°26	Mag Bearing	N 82° W	Red	Elev
PT N°25 } 0+00	5.0	768.00			763.00
1+89 <sup>66</sup>		190.50	-6°52'	27.50	740.50
2+267 <sup>56</sup>	5.2	745.70		14.9	730.80
2+457				15.2	730.50
3+137				3.2	742.50
3+451 <sup>155.49</sup>	5.15	747.65		3.2	742.50
4+50		110.515	-17°24'	37.92	709.73
5+420 <sup>96.92</sup>	5.35	712.89	-10°07'	40.14	707.54
8+591 <sup>53</sup>				6.4	706.5
9+12		Begin Brush 8-10 high		10.2	702.7
9+420 <sup>400</sup>				10.3	702.6
11+420 <sup>200</sup>				10.7	702.2
12+220 <sup>24</sup>	5.05	706.59		11.35	701.54
12+46 <sup>1.20</sup>				10.1	696.5
13+72 <sup>1.8</sup>				7.3	699.3
13+90 <sup>1.10</sup>				11.1	695.5
14+920 <sup>1.7</sup>	5.3	698.04		13.85	692.74
15+59				2.3	693.7
15+61				5.3	692.7

Red	Elev
1.52	698.04
16+44	5.6 692.4
16+64	0.0 698.0
16+90 <sup>200.53</sup>	+7°21' 20.52 718.56
18+21 <sup>31.26</sup>	5.3 723.86 718.56
PT N°26	138.69 5.3 +18°27' 39.51 763.37 = 763.00



DEC. 18 1950

BEATTY  
LEONARD  
WELKER

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EL CAPITAN DES.  
PROFILE OF RANGE

PT N° 31 To PT N° 32 Mag. Brg. S 5° 45' E

STATION				ELEV	
PT N° 31	4.65	768.78		764.13	Top 2" I.P.
0+00	X			763.63	Nat. GRD
0+10			7.8	761.0	
0+135		Edge road	9.8	759.0	
0+26		Edge road	10.7	758.1	
0+90		Slope Dist	Vert. x	18.8	750.0
(1+96.70	For Horiz	200.	-10° 30'		
	MAGS. ONLY)				
		Rod	Vert. x		
1+39		9.0	-10° 01'	33.4	735.4
1+56		7.0	-10° 25'	35.5	733.3
1+76		9.0	-10° 41'	42.0	726.8
2+00		4.0	-10° 47'	41.9	726.9
2+84		6.0	-7° 20'	42.2	726.6
2+95		3.0	-7° 12'	39.9	728.9
4+22		0.	-5° 10'	37.7	731.1
4+33		0.	-4° 19'	32.3	736.5
4+60		0.	-3° 11'	25.0	743.8
6+20		0.	-2° 12'	23.1	745.7
6+42		0.	-1° 30'	16.1	752.7
6+64.25		0.	-0° 28'	2.64	762.14
PT N° 32				762.13	Top 2" I.P.
				764.00	NAT. GRD

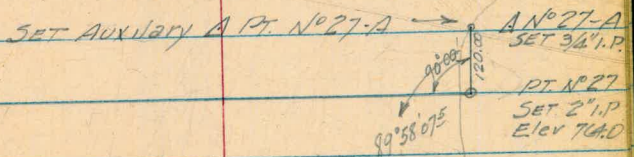


DEC. 18, 1950 BEATTY T  
LEONARD Ch. Red  
Fair, Light Breeze WELKER Ch.

EL CAPITAN RES  
PROFILE OF RANGE

STATION	PT N° 27	To	PT N° 28	Mag. Beg	N 69° W	ELEV	STATION	ELEV.
						716.78		
PT N° 27	4.8	767.80				763.00	9+88	704.4
0+00		Shoalst Red Vert. X					12.4	700.6
0+69.7	80.	4.8	-29°27'	42.1		723.7	10+02	700.1
1+06.2	115.	4.8	-22°12'	48.1		719.7	10+14	702.0
1+95.02 T	200.	4.8	-12°53'	49.17		718.63	10+41	703.2
1+40.	5.45	724.08				718.63	10+60	704.8
3+35				6.8		717.3	10+66	704.7
4+00				8.8		715.3	11+15	714.48
4+50				5.9		718.2	11+40. T	714.48
5+00				7.4		716.7	5.15	719.63
5+68		Edge Bank		9.6		714.5	60.0	5.15 +9°44'
5+80 T	4.90	716.78		12.20		711.88	199.2	200.0
6+00		Begin Thick Riser Brush 8-10 high.		9.7		707.1	5.15	45°11'
7+23				10.8		706.0	5.40	738.18
7+43				9.3		707.5	200.	54
7+68				9.0		707.8	20.65 horiz	5.20
8+00				9.8		707.0	20.65 horiz	764.89
8+27				8.9		707.9	15+37.38	21.51
8+72				8.3		708.5	15+61.03	1.6
9+18				8.5		708.3	PT N° 28	763.29
9+22				10.9		705.9	SET 2" I.P.	763.00

PT N° 28  
SET. 2" I.P.  
ELEV. 763.5





EL CAPITAN RES  
PROFILE OF RANGE

DEC. 14 1950

BEATTY  
LEONARD  
WEST  
WALKER

T.N.  
LACON.  
CH

37

STATION	+	H.	Mag. Bearing	N 45° 30' W	STATION	728.90	Red	Elev
PT N° 33	4.2	768.32			8+17		4.2	724.7
0+100			4.7	762.4	69.65			
0+10			7.9	760.4	8+61.49	71.50 + 13.18	11.4	740.3
0+812					Top 2" I.P.			
T					9+74.17	179.75 50 + 12.53	35.28	764.18 =
1+654.1								764.12
14.	5.35	730.22	170.42	-13° 25'	43.45			763.62
1+794					724.87			
					722.87			
53					722.8			
2+184					7.4			
2+714.1					5.1			
106.					7.6			
3+014.1					7.6			
136.					3.6			
200					722.6			
3+654.1					2.3			
T 255					727.9			
4+504.1					3.9			
22	4.95	731.25			726.3			
4+72					726.3			
25					10.7			
4+75					719.6			
94					15.7			
5+44					715.6			
105					15.8			
5+55					715.5			
137					13.7			
5+87					717.6			
185					10.3			
6+35					721.0			
195					11.2			
6+45					720.1			
302					9.5			
7+92.1					721.8			
5.0					7.35			
728.90					723.90			
					723.90			

Med. Scattered  
Brush 7-9' high

Dry Channel



EL CAPITAN RES  
NEW RANGE ESTABLISHED AT  
MOUTH OF SAND CREEK

SET 2" I.P. FOR PT. N°30 & PT N°31

BM	1022	770.43		760.21
IP	5.76	767.82	8.37	762.06
N°31.			3.69	764.13
N°32.			3.69	764.13
IP	3.94	765.90	5.86	761.96
CK BM.			5.70	760.20 = 760.21
BM	4.46	764.67		760.21
SET N°34			0.55	764.12
SET N°33			0.55	764.12
IP	0.0	764.12		764.12
CK N°29			1.17	762.95 = 763.00

Note: For Profile N°29 - N°30  
See Page 19 This Book

DEC 14, 1950  
BEATTY  
WEST.

38

BM on Boulder west of road (pg. 13)  
and Nor. of  triangle intersection

Top  
2" I.P. SET Nor of Road, N°31

Top  
2" I.P. " South of Creek, N°32

Top of pipe  
1" Above  
210 Contour

Top 2" I.P. SET West of Streambed N°34

" " " " East of lower Road N°33

NOTE:

Foregoing notes reduced in field  
by WA Beatty & should have an  
office check. (Pages 21-38 incl.)

NOTE:

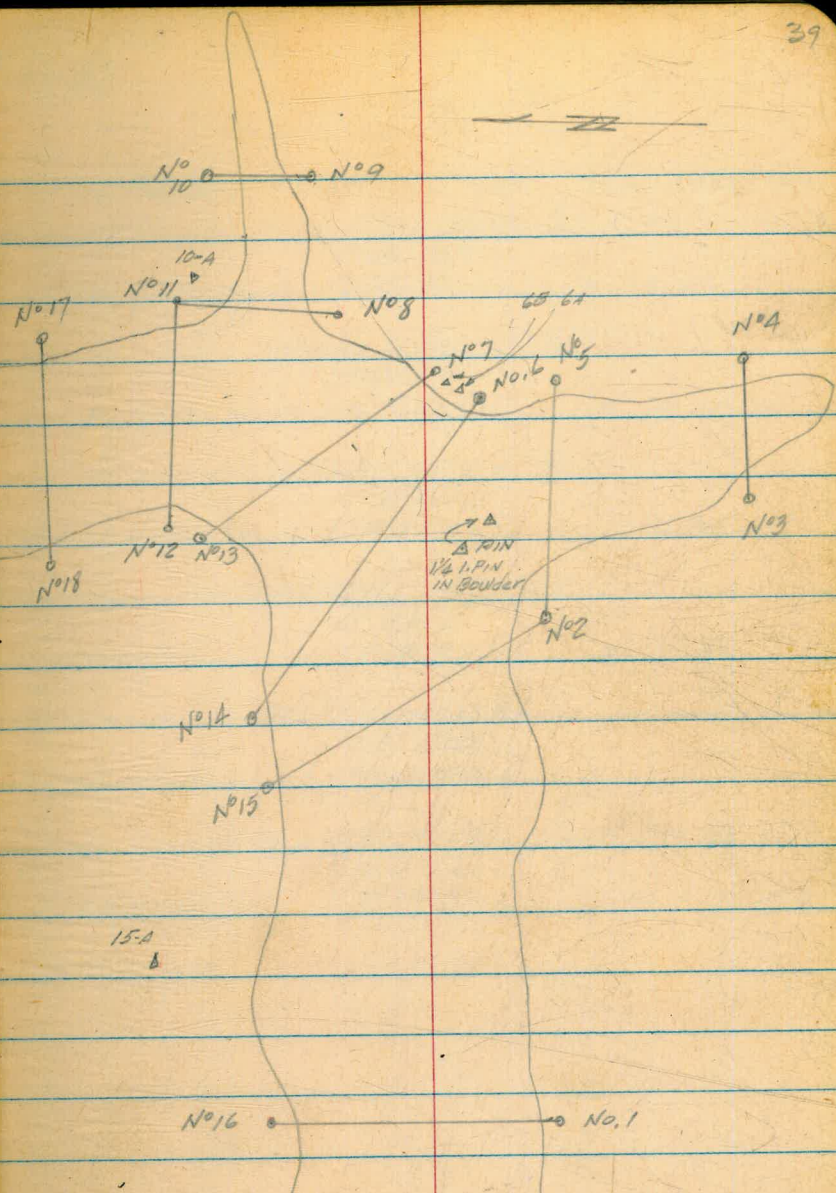
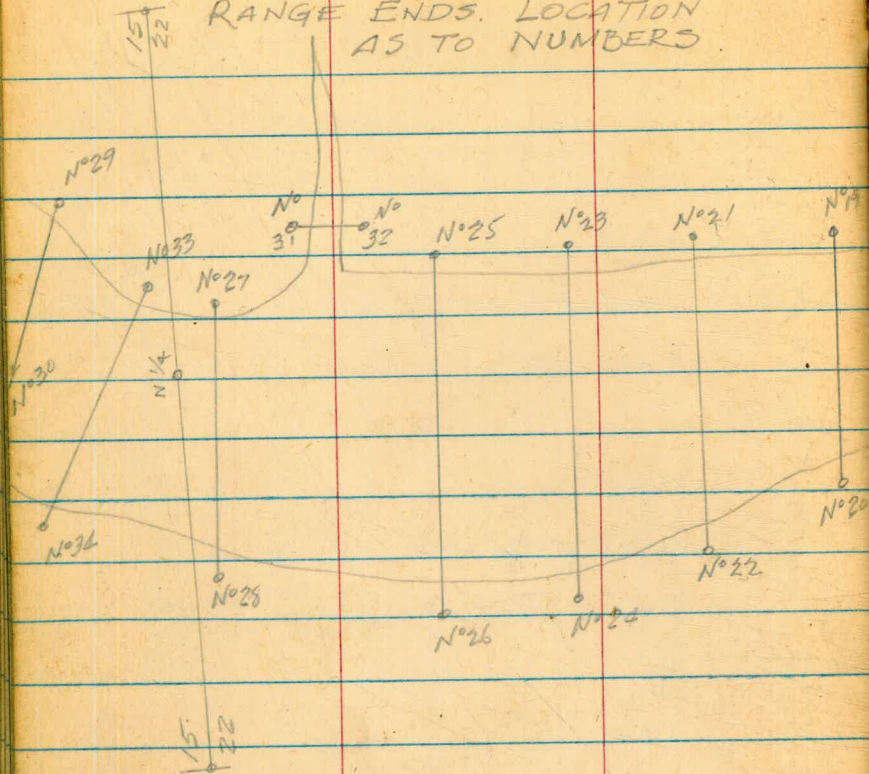
SEE ALSO BOOK 807 pages 2-6  
FOR SOUNDINGS FROM DAM  
EASTERLY IN CHANNEL.

8-2-50 JS



EL CAPITAN RES.

SKETCH SHOWING PT.S OR  
RANGE ENDS. LOCATION  
AS TO NUMBERS.



CHAINED 1167.75  
NORTH AXIS L&T DAW  
From { N 4175.52  
W W Simpson E 5000.00

South Axis L&T  
N 3007.77 (?)  
E 5000.00



## EL CAPITAN RES

TRIANGULATION  
OF RANGE ENDSDEC. 20 1950  
BEATY & H  
LEONARD  
WELKER

40

STATION Occupied.	B.S.	F.S.	MEAN $\bar{x}$
T AT N°29	SE COR SEC 15 - N°33		
	1) 24° 11' 30"		
	4) 96° 46' 00"	M) 24° 11' 30"	
	N°33 A 27-A		
	1) 18° 55' 00"		
	4) 75° 40' 00"	M) 18° 55' 00"	
	A 27-A - N°34		
	1) 5° 54' 00"		
	4) 23° 35' 30"	M) 5° 53' 52 1/2"	
	N°34 SW COR SEC 15		
	1) 20° 30'		
	4) 82° 00'	M) 20° 30' 00"	
	SW COR SEC 15 N°30		
	1) 63° 06' 30"		
	4) 252° 25' 30"	M) 63° 06' 22 1/2"	
Horiz	N°30 SE COR SEC 15		
	1) 227° 23' 30"		
	4) 189° 34' 30"	M) 227° 23' 37 1/2"	
	4) 901° 34' 30"		
			360° 00' 22 1/2"

STATION Occupied	B.S.	F.S.	MEAN $\bar{x}$
T AT N°33	N°28	JW COR SEC 15	
	1) 8° 46' 30"		
	6) 52° 38' 30"	M) 8° 46' 25"	
	SW COR SEC 15	N°34	
	1) 52° 30' 30"		
	6) 315° 03' 00"	M) 52° 30' 30"	
	N°34	N°30	
	1) 37° 48' 15"		
	6) 126° 48' 45"	M) 37° 48' 07 1/2"	
	N°30	N°29	
	1) 20° 58' 15"		
	6) 125° 49' 45"	M) 20° 58' 17 1/2"	
Horiz	N°29	N°28	
	1) 239° 57' 00"		
	6) 359° 41' 45"		
	1080		
	1439 - 41' 45"	M) 239° 56' 57 1/2"	
			360° 00' 17 1/2"



EL CAPITAN RES DEC 20 1950  
PM: Breezy

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TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.
T AT N° 34	LATH/Top Mt N° 30	
	1) 0° 07' 15"	
	6) 0° 43' 00"	M) 0° 07' 10"
	N° 30	N° 29
	1) 29° 38' 15"	
	6) 177° 50' 00"	M) 29° 38' 20"
	N° 29	SE COR SEC 15
	1) 87° 14' 30"	
	6) 163° 28' 00"	M) 87° 14' 40"
	523° 28' 00"	
	N° 33	to A27-A
	1) 72° 50' 00"	
	6) 76° 59' 30"	
	436° 59' 30"	M) 72° 29' 55"
	A27-A	N° 26
	1) 11° 22'	
	6) 68° 11' 30"	M) 11° 21' 55"
	N° 28	to SW COR SEC 15
	1) 12° 24' 00"	
	6) 74° 20' 00"	M) 12° 24' 00"
	N° 26	to N° 28
	1) 18° 34' 15"	
	6) 111° 24' 00"	M) 18° 34' 00"
	SW COR SEC 15	LATH ON Top Mt
	1) 118° 40' 15"	
	6) 352° 01' 30"	M) 118° 40' 15"
	712° 01' 30"	
	SE COR SEC 15	N° 33
	1) 9° 10' 00"	
	6) 55° 00' 30"	M) 9° 10' 05"
		360° 00' 20"

STATION B.S. F.S.  
T AT N° 34 Additional 4's

A27-A to 5/4 COR SEC 15

1) 5° 31' 30"  
6) 33° 08' 45" M) 5° 31' 27.5"

5/4 COR SEC 15 N° 26

1) 5° 50' 30"  
6) 35° 02' 30" M) 5° 50' 25"

11° 21' 52.5"



EL CAPITAN RES  
TRIANGULATION  
OF RANGE ENDS

DEC. 21, 1950  
BEATTY T.N.  
LEONARD  
WELKER  
Breezy!

STATION	B.S.	F.S.
T AT SE COR SEC 15	N <sup>o</sup> 26 To	N <sup>o</sup> 31
	1) 1° 22' 30"	M) 1° 22' 35"
	6) 8° 15' 30"	
	N <sup>o</sup> 31 To W 1/4 COR <sup>SEC</sup> 22	
	1) 1° 14' 30"	M) 1° 14' 30"
	6) 7° 27' 00"	
	W 1/4 COR SEC 22 A 27-A	
	1) 10° 00' 15"	M) 10° 00' 10"
	6) 60° 01' 00"	
	A 27-A To N <sup>o</sup> 28	
	1) 11° 32' 15"	M) 11° 32' 27.5"
	6) 69° 14' 45"	
	N <sup>o</sup> 28 To NW COR <sup>SEC</sup> 22	
	1) 5° 31' 15"	M) 5° 31' 12.5"
	6) 33° 07' 15"	
	NW COR SEC 22 - N <sup>o</sup> 34	
	1) 35° 23' 45"	M) 35° 23' 30"
	6) 212° 21' 00"	
	N <sup>o</sup> 34 - N <sup>o</sup> 30	
	1) 31° 24' 00"	M) 31° 23' 55"
	6) 188° 23' 30"	
	N <sup>o</sup> 30 - N <sup>o</sup> 29	
	1) 12° 21' 15"	M) 12° 21' 17.5"
	6) 74° 07' 45"	
	N <sup>o</sup> 29 To LATH ON MT	
	1) 10° 4' 00"	M) 10° 13' 47.5"
	6) 61° 22' 45"	

Note: N 1/4 COR  
SEC 22 IS 04  
NOR. OF LINE  
FROM NE COR  
TO NW COR.

STATION	B.S.	F.S.
T AT SE COR SEC 15	LATH ON MT	N <sup>o</sup> 26
	1) 240° 55' 00"	
	6) 5° 42' 15"	M) 240° 57' 02.5"
	1220 1445° 42' 15"	
		360° 00' 23"
T AT N <sup>o</sup> 31	NE COR SEC 15	N <sup>o</sup> 32
	1) 112° 31' 00"	M) 112° 30' 35"
	315° 03' 30"	
	6) 675° 03' 30"	
	N <sup>o</sup> 24	N <sup>o</sup> 26
	1) 20° 18' 15"	M) 20° 18' 05"
	6) 121° 48' 30"	
	N <sup>o</sup> 26	W 1/4 COR SEC 22
	1) 5° 13' 45"	M) 5° 13' 42.5"
	6) 31° 22' 15"	
	W 1/4 COR SEC 22	NW COR SEC 22
	1) 53° 55' 00"	M) 53° 54' 55"
	6) 323° 29' 30"	
	Var: NW COR SEC 22	NE COR SEC 22
	1) 123° 35' 45"	M) 123° 35' 35"
	21° 33' 30"	
	6) 721° 33' 30"	
	N <sup>o</sup> 32	N <sup>o</sup> 24
	1) 24° 27' 45"	M) 44° 27' 35"
	6) 266° 45' 15"	
		360° 00' 27.5"

SEE NEXT PAGE FOR  
ADDITIONAL X'S



## EL CAPITAN RES.

DEC. 21 1950  
Gusty & Breezy

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TRIANGULATION  
OF RANGE ENDS

STATION	P.S.	F.S.
T AT N°32	NW Cor Sec 22 - N°28	
	1) 3°15'15"	
	6) 19°30'45"	M) 3°15'07.5"
	N°28 - N°31	
	1) 43°21'00"	
	6) 260°03'00"	M) 43°20'30"
	N°31 - NW Cor Sec 22	
	1) 313°24'30"	
	6) 80°28'30"	M) 313°24'4.5"
	1880°28'30"	360°00'22.5"
T AT A 27-A (Sec. 19, 26)	N°26 W/4 Sec 22	
	1) 4°45'45"	
	6) 28°33'15"	M) 4°45'32.5"
	W/4 Sec 15 N°28	
	1) 54°22'00"	
	6) 326°12'30"	M) 54°22'05"
	N°28 NW Cor Sec 22	
	1) 4°10'15"	
	6) 25°01'00"	M) 4°10'10"
	NW Cor Sec 22 - N 1/4 Cor	
	1) 87°25'00"	
	6) 164°28'45"	M) 87°24'47.5"
	524°28'45"	
	N 1/4 Cor Sec 22 N°24	
	1) 8°53'45"	
	6) 53°21'30"	M) 8°53'35"

T AT A 27-A.	N°34 - N°29	
	1) 4°52'00"	
	6) 29°11'30"	M) 4°51'55"
	N°29 - N°33	
	1) 18°51'15"	
	6) 113°07'00"	M) 18°51'10"

N°33 - NE Cor Sec 22	
1) 21°50'15"	
6) 131°01'30"	M) 21°50'15"

NE Cor Sec 22 N°27	
1) 128°25'00"	
6) 50°-27'00"	M) 128°24'30"
770-27 00	

N°27 - N°26	
1) 26°27'00"	
6) 158°39'30"	M) 26°26'35"
	360°00'25"
	35"

T AT N°31	N°32 - A 25-A	
	1) 26°54'45"	
	6) 161°29'00"	M) 26°54'50"
	A 25-A - N°24	
	1) 105°16'00"	M) 17°32'40"



12-21-50

DEC. 26, 1950

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EL CAPITAN RES.  
TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.
T AT N° 28	N° 34	N° 33
	1) 15° 58'	
	6) 95° 46' 30"	M) 15° 57' 45"
	N° 33	N ¼ Sec 22
	1) 3° 30'	
	6) 22° 59' 30"	M) 3° 29' 55"
	N ¼ Cor Sec 22 NE Cor	
	1) 7° 43'	
	6) 46° 17' 15"	M) 7° 42' 52.5"
	NE Cor 22 A 27-A	
	1) 22° 26'	
	6) 132° 33' 30"	M) 22° 25' 35"
	A 27-A N° 27	
	1) 4° 22'	
	6) 26° 23' 30"	M) 4° 23' 55"
	N° 27	N° 32
	1) 19° 34' 30"	
	6) 117° 27' 30"	M) 19° 34' 35"
	N° 32	A 25-A
	1) 17° 48'	
	6) 106° 48' 30"	M) 17° 48' 05"
	A 25-A N° 25	
	1) 9° 53'	
	6) 59° 16' 30"	M) 9° 52' 45"
	N° 25	N° 34
	1) 258° 25'	
	6) 112° 29' 00"	M) 258° 24' 50"
	1532 29' 00"	
		360-00-275"

STATION	B.S.	F.S.
T AT N° 30	N° 29	N° 33
	1) 50° 36' 30"	
	6) 303° 48' 30"	M) 50° 36' 05"
	N° 33	N° 34
	1) 16° 09' 45"	
	6) 96° 57' 15"	M) 16° 09' 32.5"
	N° 34	SW Cor Sec 15
	1) 39° 11' 15"	
	6) 235° 06' 75"	M) 39° 11' 02.5"
	SW Cor Sec 15 - N° 29	
	1) 254° 03' 00"	
	6) 84° 18' 30"	M) 254° 03' 05"
	1520 1524° 18' 30"	

359° 59' 45"

(SEE ADDITIONAL Z)

13K 746 pg. 16



EL CAPITAN RES  
TRIANGULATION  
OF RANGE ENDS

Dec 26, 1950  
BEATTY  
LEONARD  
WELKER

Cool, Breezy  
RAIN 10:25 AM

45

STATION

BS.

FS

T AT A 25-A

N<sup>o</sup> 25 A 23-A

1) 10° 29' 45"

6) 62° 58' 00"

M) 10° 29' 40"

A 23-A N<sup>o</sup> 26

1) 47° 24' 00"

6) 284° 24' 45"

M) 47° 24' 07.5"

N<sup>o</sup> 26 W 1/2 Cor Sec 22

1) 7° 32' 30"

6) 45° 15' 00"

M) 7° 32' 30"

W 1/2 Cor Sec 22 - NW Cor Sec 22

1) 51° 40' 15"

6) 310° 01' 45"

M) 51° 40' 17.5"

NW Cor Sec 22 - N<sup>o</sup> 28

1) 7° 37' 15"

6) 45° 43' 00"

M) 7° 37' 30"

N<sup>o</sup> 28 - N<sup>o</sup> 31

1) 52° 27' 15"

6) 314° 42' 30"

M) 52° 27' 05"

N<sup>o</sup> 31 - N<sup>o</sup> 32

1) 22° 40' 00"

6) 135° 58' 30"

M) 22° 39' 45"

N<sup>o</sup> 32 - N<sup>o</sup> 25

1) 160° 09' 45"

6) 240° 58' 30"

960° 58' 30"

M) 160° 09' 45"

360° 00' 40"

T AT N<sup>o</sup> 25

A 23-A - N<sup>o</sup> 26

1) 61° 25' 15"

6) 368° 30' 00"

M) 61° 25' 00"

N<sup>o</sup> 26 - W 1/2 Cor Sec 22

1) 7° 44' 15"

6) 46° 25' 45"

M) 7° 44' 17.5"

W 1/2 Cor Sec 22 NW Cor Sec 22

1) 43° 27' 00"

6) 260° 43' 15"

M) 43° 27' 12.5"

NW Cor Sec 22 - N<sup>o</sup> 28

1) 8° 55' 00"

6) 53° 28' 15"

M) 8° 54' 42.5"

N<sup>o</sup> 28 - A 25-A

1) 45° 24' 15"

6) 272° 22' 15"

M) 45° 24' 02.5"

A 25-A - A 23-A

1) 192° 05' 30"

6) 78° 33' 00"

M) 193° 05' 30"

1080

1158° 23' 00"

360° 00' 45"



Dec. 26, 1950

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EL CAPITAN RES  
TRIANGULATION  
OF RANGE ENDS

STATION

T AT N°26

A 23-A SW COR SEC 22

1) 8° 56' 30"

6) 53° 37' 00"

M) 8° 56' 10"

SW COR SEC 22 - N°34

1) 217° 51' 15"

6) 227° 09' 15"  
1307° 09' 15"

M) 217° 51' 32.5"

N°34 - A 27-A

1) 9° 02' 15"

6) 54° 42' 15"

M) 9° 02' 02.5"

A 27-A N°31

1) 11° 11' 15"

6) 67° 06' 45"

M) 11° 11' 07.5"

N°31 - A 25-A

1) 22° 53' 00"

6) 137° 16' 45"

M) 22° 52' 47.5"

A 25-A N°25

1) 16° 37' 00"

6) 99° 41' 00"

M) 16° 36' 50"

N°25 - A 23-A

1) 73° 30' 00"

6) 81° 00' 30"  
141° 00' 30"

M) 73° 30' 05"

360° 00' 35"

N°34 - N 1/4 COR SEC 22

1) 2° 16' 00"

6) 13° 34' 00"

M) 2° 15' 40"

N°31 - NE COR SEC 22

1) 1° 21' 30"

6) 8° 08' 00"

M) 1° 21' 20"

STATION

T AT N°26

B.S.

F.S.

N°34

A 27-A

1) 6° 26' 30"

6) 40° 38' 30"

M) 6° 26' 25"

NE COR SEC 22 - A 25-A

1) 21° 31' 30"

6) 129° 07' 00"

M) 21° 31' 30"

T AT W 1/4 COR SEC 22

N°34 -

N 1/4 COR SEC 22

1) 3° 18' 30"

6) 19° 52' 00"

M) 3° 18' 40"

N 1/4 COR SEC 22 - A 27-A

1) 8° 06' 15"

6) 48° 37' 30"

M) 8° 06' 15"

A 27-A - NE COR SEC 22

1) 10° 24' 15"

6) 62° 22' 45"

M) 10° 24' 07.5"

NE COR SEC 22 - N°31

1) 1° 15' 30"

6) 7° 31' 30"

M) 1° 15' 15"

N°31 - A 25-A

1) 25° 12' 00"

6) 151° 11' 45"

M) 25° 11' 57.5"

A 25-A - N°25

1) 16° 49' 00"

6) 100° 53' 00"

M) 16° 48' 50"

N°25 - N°34

1) 294° 55' 15"

6) 329° 33' 00"  
1769° 33' 00"

M) 294° 55' 30"

± 360° 00' 35"



DEC. 26 1950

47.

EL CAPITAN RES  
TRIANGULATION  
OF RANGE ENDS

STATION	B5	F5
T AT NW COR SEC 22	LATHEN MT	N° 30
	1) 25° 30' 30"	M) 25° 30' 22.5"
	6) 153° 02' 15"	
	N° 30 - N° 29	
	1) 10° 57' 00"	M) 10° 56' 45"
	6) 65° 40' 30"	
	N° 29 - N° 34	
	1) 11° 04' 30"	M) 11° 04' 30"
	6) 66° 27' 00"	
	N° 34 - N° 33	
	1) 12° 20' 00"	M) 12° 20' 15"
	6) 74° 01' 30"	
	N° 33 - A 27-A	
	1) 29° 01' 25"	M) 29° 01' 45"
	6) 174° 10' 30"	
	A 27-A - N° 27	
	1) 2° 49' 30"	M) 2° 49' 15"
	6) 16° 55' 30"	
	N° 27 - N° 32	
	1) 13° 44' 30"	M) 13° 44' 22.5"
	6) 82° 26' 15"	
	N° 32 - N° 25	
	1) 22° 01' 30"	M) 22° 01' 15"
	6) 132° 07' 30"	
	N° 25 - LATHEN MT	
	1) 232° 32"	M) 232° 31' 45"
	6) 395° 10' 30"	
	1395° 10' 30"	
		360° 00' 15"

STATION	B5	F5
T AT A <sup>21</sup> 23-A	N° 23	N° 20
	1) 2° 50' 45"	M) 2° 50' 42.5"
	6) 17° 04' 15"	
	N° 20 - A <sup>21</sup> 22-A	
	1) 2° 26' 30"	M) 2° 26' 22.5"
	6) 14° 38' 15"	
	A <sup>21</sup> 22-A - N° 24	
	1) 12° 52' 15"	M) 12° 52' 00"
	6) 77° 12' 00"	
	N° 24 - SW COR SEC 22	
	1) 35° 25' 30"	M) 35° 25' 20"
	6) 212° 32' 00"	
	N° 26 - NW COR SEC 22	
	1) 3° 58' 00"	M) 3° 57' 47.5"
	6) 23° 46' 45"	
	NW COR SEC 22 - N° 28	
	1) 9° 03' 00"	M) 9° 02' 45"
	6) 54° 16' 30"	
	N° 28 - N 1/4 COR SEC 22	
	1) 18° 15' 30"	M) 18° 15' 30"
	6) 109° 33' 00"	
	N 1/4 COR SEC 22 - A 25-A	
	1) 11° 13' 30"	M) 11° 13' 50"
	6) 67° 23' 00"	
	A 25-A - N° 25	
	1) 2° 36' 15"	M) 2° 36' 10"
	6) 15° 37' 00"	
	N° 25 - N° 23	
	1) 163° 12' 00"	M) 163° 12' 00" !!
	6) 359° 12' 00"	
	979° 12' 00"	
		360° 01' 12.5" !!

SW COR SEC 22 - N° 26  
1) 98° 05' 45"  
6) 228° 53' 00"  
M) 228° 53' 00"  
N) 98° 08' 30"

SW COR SEC 22 - N° 24  
1) 6° 35' 15"  
6) 39° 31' 00"  
M) 6° 35' 10"



DEC 27 1950  
Clear & MILD.

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EL CAPITAN RES.  
TRIANGULATION  
OF RANGE ENDS

STATION	F.S.	B.S.
T AT SW COR SEC 22 N° 26 - Δ 23-A	1) 72° 57' 00" 2) 77° 41' 30" 3) 437' 41' 30"	M) 72° 56' 55"
Δ 23A - N° 23	1) 93° 55' 00" 2) 203° 29' 00" 3) 563° 29' 00"	M) 93° 54' 50"
Δ 23 - Δ 21A	1) 31° 54' 30" 2) 191° 27' 00"	M) 31° 54' 30"
Δ 21-A N° 22	1) 15° 43' 15" 2) 94° 18' 30"	M) 15° 43' 05"
N° 22 - N° 24	1) 33° 29' 30" 2) 200° 36' 00"	M) 33° 29' 20"
N° 24 - N° 26	1) 112° 01' 45" 2) 312° 10' 00" 3) 672° 10' 00"	M) 112° 01' 40" 360° 00' 20"

STATION	B.S.	F.S.
T AT N° 23	Δ 21-A 1) 14° 33' 00" 2) 87° 18' 00"	N° 22 M) 14° 33' 00"
N° 22	N° 24 1) 63° 47' 15" 2) 22° 42' 00" 3) 382° 42' 00"	M) 63° 47' 00"
N° 24	SW COR SEC 22 1) 62° 17' 30" 2) 13° 42' 15" 3) 272° 18' 15"	M) 62° 17' 125"
SW COR SEC 22	N° 28 1) 10° 39' 00" 2) 63° 55' 00"	M) 10° 39' 10"
N° 28	Δ 23-A 1) 21° 51' 20" 2) 139° 07' 00"	M) 21° 51' 10"
Δ 23-A	Δ 21-A 1) 186° 53' 00" 2) 41° 19' 15" 3) 1121° 19' 15"	M) 186° 53' 125" 360° 00' 45"



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EL CAPITAN RES.  
TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.
T AT N°24	N°31 -	A25-A
	1) 5°34'00"	
	6) 33°23'15"	M) 5°33'52.5"
A25-A - N°25		
	1) 3°28'30"	
	6) 20°51'30"	M) 3°28'35"
N°25 - SW COR SEC 22		
	1) 21°11'00"	
	6) 127°04'00"	M) 21°10'40"
SW COR SEC 22 - A23-A		
	1) 1°32'00"	
	6) 9°11'30"	M) 1°31'55"
A23-A N°23		
	1) 35°03'30"	
	6) 210°19'30"	M) 35°03'15"
N°23 A 21-A.		
	1) 78°08'15"	
	108°28'30"	
	6) 268°48'30"	M) 78°08'05"
A 21-A N°31		
	1) 215°04'00"	
	210°24'30"	
	6) 1290°24'30"	M) 215°04'05"
		360°00'27.5"

STATION	B.S.	F.S.
T AT A 21-A	N°21 -	N°20
	1) 31°57'30"	
	6) 191°24'00"	M) 31°57'20"
N°20 - N°22		
	1) 40°15'30"	
	6) 241°32'45"	M) 40°15'27.5"
N°22 - N°24		
	1) 121°50'00"	
	10°59'30"	
	6) 730°59'30"	M) 121°49'55"
N°24 - N°26		
	1) 7°19'00"	
	6) 43°55'00"	M) 7°19'10"
N°26 - SW COR SEC 22		
	1) 8°44'45"	
	6) 52°27'00"	M) 8°44'30"
SW COR SEC 22 A 23-A		
	1) 5°52'30"	
	6) 35°13'00"	M) 5°52'10"
A 23-A - N°23		
	1) 1°36'45"	
	6) 9°40'00"	M) 1°36'40"
N°23 - N°21		
	1) 142°25'15"	
	134°32'00"	
	6) 854°32'00"	M) 142°25'20"
		360°00'32.5"



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EL CAPITAN RES,  
TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.
T AT N° 21	N° 20	N° 22
	1) 69° 00' 30"	M) 69° 00' 40"
	6) <sup>54° 04' 00"</sup> 41° 04' 00"	
	N° 22 - A 21-A	
	1) 70° 20' 00"	M) 70° 19' 52.5"
	6) <sup>61° 59' 15"</sup> 21° 59' 15"	
	A 21-A - N° 24	
	1) 9° 33' 00"	M) 9° 33' 15"
	6) 57° 19' 30"	
	N° 24 - N° 20	
	1) 211° 06' 30"	M) 211° 06' 35"
	6) 186° 39' 30"	
	1266° 39' 30"	360° 00' 22.5"

1266  
1860  
786

STATION	B.S.	F.S.
T AT N° 22	N° 31	SW COR SEC 22
	1) 5° 08' 00"	M) 5° 07' 55"
	6) 30° 47' 30"	
	SW COR SEC 22	A 25-A
	1) 1° 23' 00"	M) 1° 22' 55"
	6) 8° 17' 30"	
	A 25-A	A 23-A
	1) 1° 38' 30"	M) 1° 38' 15"
	6) 9° 49' 30"	
	A 23-A	N° 23
	1) 3° 17' 45"	M) 3° 17' 35"
	6) 19° 45' 30"	
	N° 23	A 21-A
	1) 20° 06' 00"	M) 20° 05' 40"
	6) 120° 34' 00"	
	A 21-A	E 1/4 COR SEC 28
	1) 12° 08' 30"	M) 12° 08' 25"
	6) 72° 50' 30"	
	E 1/4 COR SEC 28	N° 21
	1) 25° 19' 00"	M) 25° 18' 55"
	6) 151° 53' 30"	
	N° 21	SE COR SEC 28
	1) 29° 39' 15"	M) 29° 39' 10"
	6) 177° 55'	
	SEC COR SEC 28	N° 19
	1) 37° 20' 00"	M) 37° 19' 45"
	6) 223° 58' 30"	



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EL CAPITAN RES,  
TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.
T AT N°22	N°19 - A17-B	
	1) 6°18'00"	
	2) 37°45'00"	M) 6°17'30"
	A17-B - A17-A	
	1) 4°16'30"	
	2) 25°38'00"	M) 4°16'20"
	A17-A N°34	
	1) 213°28'15"	
	2) 200°51'00"	M) 213°28'30"
	1280°51'00"	
		360°00'55"

STATION	B.S.	F.S.
T AT N°20	A21-A	A23-A
	1) 1°34'	
	2) 9°24'00"	M) 1°34'00"
	A23-A	N°21
	1) 7°08'30"	
	2) 42°49'25"	M) 7°08'17.5"
	N°21	E 1/4 COR SEC. 28
	1) 1°52'45"	
	2) 11°27'00"	M) 1°52'30"
	E 1/4 COR SEC 28	SE COR SEC 28
	1) 27°55'30"	
	2) 167°32'30"	M) 27°55'25"
	SE COR. SEC. 28	N°19
	1) 52°10'30"	
	2) 313°02'15"	M) 52°10'22.5"
	N°19 -	A17-B
	1) 37°37'30"	
	2) 225°44'15"	M) 37°37'22.5"
	A17-B	N°8
	1) 2°08'45"	
	2) 12°52'30"	M) 2°08'45"
	N°8	N°18
	1) 15°37'30"	
	2) 93°25'15"	M) 15°37'32.5"
	N°18	A21-A
	1) 194°10'00"	
	35°01'00"	
	2) 1165°01'00"	M) 194°10'10"
	A17-B -	A17-A
	1) 19°44'30"	M) 19°44'20"
	2) 118°26'00"	360°00'45"



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EL CAPITAN RES.  
TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.
T AT N°19	A 17-B	N°20
	1) 95°18'00"	M) 95°18'00"
	6) 211°48'00" 211°48'00"	
	N°20	N°22
	1) 53°59'15"	M) 53°59'10"
	6) 323°53'00"	
	N°22	N°24
	1) 18'50'	M) 18'50'00"
	6) 113°00'00"	
	N°24	A 17-B
	1) 191°52'45"	M) 191°53'00"
	6) 71°18'00" 71°18'00"	
		360°00'10"

STATION	B.S.	F.S.
T AT A 17-B	A 17-A	N°18
	1) 17°36'45"	M) 17°36'40"
	6) 105°20'00"	
	N°18	N°20
	1) 123°35'15"	M) 123°35'20"
	6) 21°32'00" 21°32'00"	
	N°20	N°22
	1) 22°39'30"	M) 22°39'30"
	6) 135°57'00"	
	N°22	N°24
	1) 14°07'30"	M) 14°07'22.5"
	6) 84°44'15"	
	N°24	N°19
	1) 10'18'	M) 10'17'50"
	6) 61'47'00"	
	N°19	A 17-A
	1) 171°44'00"	M) 171°44'02.5"
	6) 310°24'15" 103°24'15"	
		360°00'45"



JAN. 2, 1951

BEATTY  
LEONARD  
WELKER

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EL CAPITAN RES.  
TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.
T AT PT N° 18	N° 20	N° 24
	1) 4° 58' 00"	
	2) 29° 46' 30"	M) 4° 57' 45"
	N° 24	N° 26
	1)	
	2)	
	24	A 21-A
	N° 26	
	1) 2° 09' 15"	
	2) 12° 55' 00"	M) 2° 09' 10"
	A 21-A	A 17-D
	1) 11° 48' 00"	
	2) 70° 48' 15"	M) 11° 48' 02.5"
	A 17-D	A 17-A
	1) 19° 17' 30"	
	2) 115° 45' 00"	M) 19° 17' 30"
	A 17-A	WITNESS COR S 1/4 COR SEC 33
	1) 9° 47' 00"	
	2) 58° 41' 15"	M) 9° 46' 52.5"
	WITNESS COR S 1/4 COR SEC 33	N° 17
	1) 19° 51' 15"	
	2) 119° 07' 00"	M) 19° 51' 10"
	N° 17	SE COR SEC 33
	1) 1° 58' 00"	
	2) 11° 48' 15"	M) 1° 58' 02.5"
	SE COR SEC 33	A 11-A
	1) 65° 03'	
	2) 30° 16' 30"	M) 65° 02' 45"
	3) 390° 16' 30"	

STATION	B.S.	F.S.
T AT N° 18	A 11-A	N° 11
	1) 6° 50'	
	2) 41° 20' 30"	M) 6° 53' 25"
	N° 11	N° 20
	1) 218° 16' 00."	
	2) 229° 37' 00"	M) 218° 16' 10"
	3) 1309° 37' 00"	
		360° 00' 42.5"
	T AT N° 17	A 11-A
		N° 8
		1) 7° 45' 00"
		2) 46° 28' 20"
		M) 7° 44' 45"
		N° 8
		N° 18
		1) 80° 27' 30"
		2) 122° 44'
		3) 482° 44'
		M) 80° 27' 20"
		N° 18
		A 17-A
		1) 85° 41' 30"
		2) 154° 08' 30"
		3) 514° 08' 30"
		M) 85° 41' 25"
		A 17-A
		N° 8
		1) 186° 06' 30"
		2) 36° 39' 30"
		3) 1116° 39'
		M) 186° 06' 35"
		WITNESS COR S 1/4 COR SEC 33
		A 17-A
		1) 21° 43' 30"
		2) 130° 22' 00"
		M) 21° 43' 20"
		WITNESS COR S 1/4 COR SEC 33
		N° 18
		1) 63° 58' 00"
		2) 23° 47' 15"
		3) 283° 47' 15"
		M) 63° 57' 52.5"
		85° 41' 32.5"



JAN. 2, 1951  
Windy - P.M.

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EL CAPITAN RES  
TRIANGULATION  
OF RANGE ENDS

STATION	F.S.	B.S.
T AT A17-A	N°17	A11-A
	1) 4°53'30"	
	6) 29°21'20"	M) 4°53'35"
A11-A	N°8	
	1) 7°08'00"	
	6) 42°48'00"	M) 7°08'00"
N°8	Witness Cor 5/4 Cor Sec 33	
	1) 16°49'30"	
	6) 100°59'30"	M) 16°48'55"
Witness Cor 5/4 Cor Sec 33	N°18	
	1) 35°50'45"	
	6) 215°03'30"	M) 35°50'35"
N°18	N°20	
	1) 124°02'30"	
	6) 24°14'00"	M) 124°02'20"
N°20	A17-B	
	1) 19°04'30"	
	6) 114°26'30"	M) 19°04'25"
A17-B	N°17	
	1) 152°13'	
	6) 193°19'	M) 152°13'10"
	913°19'	
		360°01'00"

STATION	B.S.	F.S.
T AT	Witness Cor 5/4 Cor Sec 33	N°18
	1) 96°10'00"	
	6) 216°59'00"	M) 96°09'50"
	516	
N°18	A17-A	
	1) 132°21'30"	
	6) 86°10'00"	M) 132°21'40"
	806	
A17-A	N°17	
	1) 129°28'30"	
	6) 56°51'30"	M) 129°28'35"
	776	
		360°00'05"



JAN. 2, 1951  
Wind died down 3:00 pm

JAN 3 1950  
BEATTY  
LEONARD  
WELKER

53

EL CAPITAN RES.  
TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.
T AT A 11-A	N <sup>o</sup> 11 1) 13° 56' 00" 2) 83° 35' 30"	N <sup>o</sup> 8 M) 13° 25' 50"
	N <sup>o</sup> 8 1) 12° 20' 00" 2) 73° 58' 15"	N <sup>o</sup> 7 M) 12° 19' 42.5"
NOTE:	N <sup>o</sup> 7	N <sup>o</sup> 12
SEE Page 56		
FOR A 11-A	N <sup>o</sup> 12	N <sup>o</sup> 18
Complete		
	N <sup>o</sup> 18	A 17-A
	A 17-A	N <sup>o</sup> 17
	N <sup>o</sup> 17	N <sup>o</sup> 11

STATION	B.S.	F.S.
T AT A 10-A FD ORIG Δ POINT Old Chiz. □ 69 Rock	N <sup>o</sup> 10 1) 32° 44' 30" 2) 196° 26' 30"	N <sup>o</sup> 9 M) 32° 44' 25"
	N <sup>o</sup> 9 1) 70° 10' 30" 2) 61° 03' 30" 3) 421° 03' 30"	N <sup>o</sup> 8 M) 70° 10' 35"
	N <sup>o</sup> 8 1) 12° 33' 30" 2) 75° 19' 30"	N <sup>o</sup> 7 M) 12° 33' 15"
	N <sup>o</sup> 7 1) 2° 37' 15" 2) 15° 44' 00"	5/4 Cor Sec <sup>4</sup> <del>33</del> M) 2° 37' 20"
	N <sup>o</sup> 13 1) 6° 21' 45" 2) 40° 09' 15"	N <sup>o</sup> 12 M) 6° 41' 32.5"
	N <sup>o</sup> 12 1) 69° 15' 00" 2) 55° 29' 00" 3) 215° 29' 00"	N <sup>o</sup> 18 M) 69° 14' 50"
	N <sup>o</sup> 18 1) 21° 58' 30" 2) 131° 51' 15"	N <sup>o</sup> 11-A M) 21° 58' 32.5"
	N <sup>o</sup> 11-A 1) 108° 22' 25" 2) 290° 16' 00" 3) 650° 16' 00"	N <sup>o</sup> 10 M) 108° 22' 40"
	5/4 Cor Sec <sup>4</sup> <del>33</del> 1) 35° 37' 30" 2) 213° 44' 00"	N <sup>o</sup> 13 M) 35° 37' 20"

360° 00' 30"

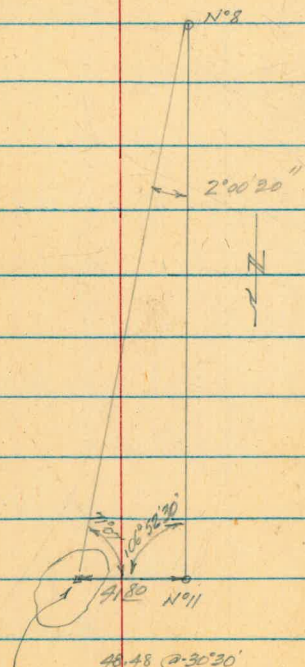


JAN. 3 1951

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EL CAPITAN RES  
TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.
T AT A 10-A	N <sup>o</sup> 9 SE COR SEC <del>33</del> <sup>4</sup>	
	1) 20° 02'	
	2) 120° 13' 00"	M) 20° 02' 10"
	SE COR SEC <del>33</del> <sup>4</sup> - N <sup>o</sup> 8	
LS	1) 50° 08' 30"	M) 50° 08' 25"
	2) 300° 56' 30"	
	N <sup>o</sup> 8 to N <sup>o</sup> 11	
	1) 71° 07'	M) 71° 07'
	2) 122° 14'	



46.48 @ 30° 30'  
30° 26' = 41.84  
A 10-A  
FD CHIS PT.  
ORIG. Δ PT.  
ON BOULDER

STATION	B.S.	F.S.
T AT A 11-A	CGIR. <del>4</del> <sup>4</sup> SE COR SEC <del>33</del> <sup>4</sup>	A 10-A
	1) 12° 55' 30"	
	2) 77° 33' 30"	M) 12° 55' 35"
	A 10-A	N <sup>o</sup> 11
	1) 2° 11' 30"	
	2) 13° 09' 00"	M) 2° 11' 30"
	N <sup>o</sup> 11	N <sup>o</sup> 8
	1) 13° 55' 45"	
	2) 83° 34' 30"	M) 13° 55' 45"
	N <sup>o</sup> 8	N <sup>o</sup> 7
	1) 12° 20' 00"	
	2) 73° 58' 30"	M) 12° 19' 45"
	N <sup>o</sup> 7	S <sup>1</sup> / <sub>4</sub> COR SEC <del>33</del> <sup>4</sup>
	1) 4° 44' 00"	
	2) 28° 23' 30"	M) 4° 43' 55"
	S <sup>1</sup> / <sub>4</sub> COR SEC <del>33</del> <sup>4</sup>	N <sup>o</sup> 12
	1) 23° 47' 30"	
	2) 122° 44' 30"	M) 23° 47' 25"
	N <sup>o</sup> 12	N <sup>o</sup> 18
	1) 92° 36' 00"	
	2) 567' 32"	M) 94° 35' 40"
	N <sup>o</sup> 18	A 17-A
	1) 23° 34' 30"	
	2) 141° 26' 45"	M) 23° 34' 27"
	A 17-A	N <sup>o</sup> 17
	1) 1° 13' 00"	
	2) 7° 18' 00"	M) 1° 13' 00"
	N <sup>o</sup> 17	CGIR. <del>4</del> <sup>4</sup> SE COR SEC <del>33</del> <sup>4</sup>
	1) 170° 42' 50"	
	2) 304' 17"	M) 170° 42' 50"
	3) 1024' 17"	359° 59' 52"



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EL CAPITAN RES.  
TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.	
T AT N° 11	N° 8	Δ 10-A	
	1) 106° 52' 30"		M) 106° 52' 30"
	2) 213° 45' 00"		
	N° 8	N° 12	
	1) 59° 09' 45"		M) 59° 09' 30"
	6) 354° 57' 00"		
	N° 12	N° 18	
	1) 70° 01' 30"		M) 70° 01' 15"
	6) 420° 07' 30"		
	N° 18	Δ 11-A	
	1) 23° 44' 00"		M) 23° 43' 55"
	6) 142° 23' 30"		
	Δ 11-A	N° 8	
	1) 207° 05' 30"		M) 207° 05' 35"
	6) 162° 23' 30"		
	6) 1212"		
			360° 00' 15"

STATION	B.S.	F.S.	
T AT N° 10	CG 1 R 4 SE COR SEC 33	N° 9	
	1) 4° 39' 00"		M) 4° 38' 50"
	6) 27° 53' 00"		
	N° 9	5/4 COR SEC 33	
	1) 51° 10' 30"		M) 51° 10' 20"
	6) 307° 02' 00"		
	5/4 COR SEC 33	N° 8	
	1) 2° 40' 45"		M) 4° 40' 47.5"
	6) 28° 04' 45"		
	N° 8	N° 13	
	1) 23° 26' 30"		M) 23° 26' 30"
	6) 140° 39' 00"		
	N° 13	N° 12	
	1) 4° 42' 00"		M) 4° 21' 40"
	6) 28° 10' 00"		
	N° 12	Δ 10-A	
	1) 12° 08' 00"		M) 12° 08' 00"
	6) 72° 48' 00"		
	Δ 10-A	E 1/4 COR SEC 33	
	1) 85° 54' 00"		M) 85° 53' 57.5"
	6) 155° 23' 45"		
	E 1/4 COR SEC 33	SE COR SEC 33	
	1) 173° 20"		M) 173° 20' 10"
	6) 320° 01' 00"		
	6) 1040"		
			360° 00' 15"



JAN. 3, 1951

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EL CAPITAN RES  
TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.
T AT N° 9	Δ 10-A	N° 10
	1) 51° 08' 45"	M) 51° 08' 40"
	6) 306° 52' 00"	
	N° 10	E 1/4 COR SEC 37 <sup>4</sup>
	1) 0° 58' 00"	M) 0° 57' 55"
	6) 5° 47' 30"	
	E 1/4 COR SEC 37 <sup>4</sup> - Δ 10-A	
	1) 307° 53' 30"	M) 307° 53' 35"
	6) 1847° <sup>+7° 21' 30"</sup>	
		360° 00' 10"

STATION	B.S.	F.S.
T AT N° 8	N° 13	N° 12
	1) 10° 09' 30"	M) 10° 09' 25"
	6) 60° 56' 30"	
	N° 12	N° 20
	1) 51° 05' 00"	M) 51° 04' 55"
	6) 306° 29' 30"	
	N° 20	Δ 17-A
	1) 1° 10' 30"	M) 1° 10' 20"
	6) 7° 02' 00"	
	Δ 17-A	N° 17
	1) 1° 49' 45"	M) 1° 49' 50"
	6) 10° 59' 00"	
	N° 17	Δ 11-A
	1) 12° 01' 00"	M) 12° 01' 05"
	6) 72° 06' 30"	
	Δ 11-A	N° 11
	1) 13° 10' 00"	M) 13° 09' 50"
	6) 78° 59' 00"	
	N° 11	Δ 10-A
	1) 2° 00' 30"	M) 2° 00' 30"
	6) 12° 03' 00"	
	Δ 10-A	E 1/4 COR SEC 37 <sup>4</sup>
	1) 22° 24' 15"	M) 22° 24' 10"
	6) 134° 25"	
	E 1/4 COR SEC 37 <sup>4</sup>	N° 10
	1) 14° 25' 15"	M) 14° 25' 10"
	6) 86° 31' 00"	
	N° 10	N° 13
	1) 231° 45' 30"	M) 231° 45' 25"
	6) 310° 32' 30"	360° 00' 40"
	1) 139°	



EL CAPITAN RES.  
TRIANGULATION  
OF RANGE ENDS

JAN 4 1958  
A.M. - BREEZY  
BEATTY  
LEONARD  
WELKER

STATION	B.S.	F.S.
T AT N°13	E 1/4 COR SEC 32 - A 10-A	
	1) 2°55'	
	6) 17°30'30"	M) 2°55'05"
	A 10-A	N°10
	1) 9°28'00"	
	6) 56°48'00"	M) 9°28'00"
	N°10	N°8
	1) 28°18'30"	
	6) 169°52'00"	M) 28°18'40"
	N°8	N°7
	1) 36°05'00"	
	6) 216°28'30"	M) 36°04'45"
	N°7	A 6-B
	1) 56°50'00"	
	6) 340°59'00"	M) 56°49'50"
	A 6-B	A 6-A
	1) 6°24'00"	
	6) 38°22'30"	M) 6°23'45"
	A 6-A	N°2
	1) 16°53'15"	
	6) 101°20'00"	M) 16°53'20"
	N°2	E 1/4 COR SEC 32
	1) 203°07'00"	
	6) 138°42'00"	M) 203°07'00"
		360°00'25"
	(Cont see N°14 17x1*)	

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STATION	B.S.	F.S.
T AT N°12	A 11-A	N°11
	1) 31°28'30"	
	6) 188°49'30"	M) 31°28'15"
	N°11	A 10-A
	1) 0°20'15"	
	6) 2°01'30"	M) 0°20'15"
	A 10-A	N°10
	1) 7°28'15"	
	6) 44°49'20"	M) 7°28'15"
	N°10	N°9
	1) 33°47'00"	
	6) 202°39'30"	M) 33°46'35"
	N°9	A 11-A
	1) 286°57'	
	6) 281°21'	M) 286°56'30"
	6) 172°	
		360°00'10"
	1/16/50	
T AT N°13		
	N°2	WITNESS COR W-NR COR SEC 8
	1) 21°57'30"	
	6) 139°45'00"	M) 21°57'30"
	WITNESS COR W-NR COR SEC 8	N°14
	1) 5°26'00"	
	6) 32°35'30"	M) 5°25'55"
	N°14	E 1/4 COR SEC 4
	1) 175°43'45"	
	6) 334°21'00"	M) 175°43'30"
	1054-21-00	
		203°06'55"
		OK



EL CAPITAN RES  
TRIANGULATION  
OF RANGE ENDS

JAN. 4, 1951  
COOL

JAN. 8 1951

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STATION	B.S.	F.S.	
TAT N°7	A 6-B	N°14	
	1) 14°47'00"		
	6) 88°42'20"	M) 14°47'05"	
	N°14	N°13	
	1) 57'15"		
	6) 347°28'45"	M) 57'14.475"	
	N°13	A 11-A	
	1) 52°30'30"		
	6) 315°03'00"	M) 52°30'30"	
	A 11-A	A 10-A	
	1) 15°23'45"		
	6) 92°21'30"	M) 15°23'25"	
	A 10-A	E 1/4 Cor Sec 4 <sup>A</sup>	
	1) 11°49'30"		
	6) 76°57'00"	M) 11°49'30"	
	E 1/4 Cor Sec 4 <sup>A</sup>	A 6-B	
	1) 208'15"		
	6) 169°29'30"	M) 208'14.55"	
	12.49"		
		360°00'22.5"	

STATION	F.S.	B.S.	
TAT A 6-B	A 6-A	N°2	
	1) 13°29'00"		
	6) 80°53'00"	M) 13°28'50"	
	N°2	N°1	
	1) 16°36'15"		
	6) 99°36'30"	M) 16°36'05"	
	N°1	N°14	
	1) 25°09'30"		
	6) 150°57'30"	M) 25°09'35"	
	N°14	N°13	
	1) 108°01'00"		
	6) 285°06'00"	M) 108°01'00"	
	N°13	A 11-A	
	1) 12°51'15"		
	6) 77°06'00"	M) 12°51'00"	
	A 11-A	A 10-A	
	1) 14°28'00"		
	6) 86°48'00"	M) 14°28'00"	
	A 10-A	E 1/4 Cor Sec 4	
	1) 4°07'00"		
	6) 24°41'30"	M) 4°06'55"	
	E 1/4 Cor Sec 4	N°10	
	1) 7°21'00"		
	6) 46°06'30"	M) 7°41'05"	
	N°10	N°8	
	1) 3°01'30"		
	6) 18°10'00"	M) 3°01'20"	

205 24-10  
Cont'd next page



JAN 8 1959

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EL CAPITAN RES.  
TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.
T AT A-6-B cont'd	N° 8	N° 7
	1) 8° 59' 30"	M) 8° 59' 35"
	6) 53° 57' 30"	
	N° 7 Witness Cor SW Cor SEC 4	
	1) 96° 53' 15"	M) 96° 53' 10"
	6) 221° 19' 00"	
	381° 17' 00"	
	Witness Cor SW Cor SEC 4 - A 6-A	
	1) 48° 43' 30"	M) 48° 43' 35"
	6) 292° 21' 30"	
		154° 36' 20"
		205° 24' 10"
		360° 00' 30"
(Cont'd from page 64)		
T AT N° 2	W 1/4 Cor SEC 8 - N° 1	
	1) 6° 35' 30"	M) 6° 35' 15"
	6) 39° 31' 30"	
	N° 1 - SW DAM AXIS	
	1) 0° 30' 00"	M) 0° 29' 30"
	6) 2° 57' 00"	
	SW DAM AXIS Nor DAM AXIS	
	1) 15° 46' 30"	M) 15° 46' 20"
	6) 94° 38' 00"	
	SE Cor SEC 8 - W 1/4 Cor SEC 8	
	1) 132° 02' 30"	M) 132° 02' 25"
	6) 72° 14' 30"	
	792° 14' 30"	
	N 1/4 SEC 8 N° 15	
	1) 6° 25' 30"	M) 6° 25' 30"
	6) 38° 33' 00"	
	A 15-A N 1/4 Cor SEC 8	
	1) 41° 54' 25"	M) 41° 54' 35"
	6) 251° 27' 30"	

STATION	B.S.	F.S.
T AT A 6-A	N° 6	A PIN
	1) 0° 57' 30"	M) 0° 57' 45"
	6) 5° 46' 30"	
	A PIN	N° 3
	1) 0° 03' 30"	M) 0° 03' 35"
	4) 0° 21' 30"	
	N° 3	N° 2
	1) 25° 05' 45"	M) 25° 05' 40"
	6) 150° 34' 00"	
	N° 2	N° 1
	1) 17° 35' 45"	M) 17° 35' 40"
	6) 105° 34' 00"	
	N° 1	NE Cor SEC 8 Witness Cor
	1) 27° 16'	M) 27° 15' 40"
	6) 165° 34' 00"	
	Witness Cor NE Cor SEC 8	N° 14
	1) 9° 49' 00"	M) 9° 48' 55"
	6) 58° 53' 30"	
	N° 14	N° 13
	1) 98° 24' 00"	M) 98° 24' 10"
	6) 230° 25' 00"	
	396° 25'	
	N° 13	A 6-B
	1) 10° 21' 30"	M) 10° 21' 30"
	6) 62° 09' 00"	
	A 6-B	Witness Cor SW Cor SEC 4
	1) 4° 42' 00"	M) 4° 41' 55"
	6) 28° 11' 30"	
	Witness Cor SW Cor SEC 4	N° 6
	1) 165° 46' 00"	M) 165° 45' 50"
	6) 274° 35' 00"	360-00-40"
	360° 00' 40"	



JAN. 8, 1951  
Brazzy

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EL CAPITAN RES  
TRIANGULATION  
OF RANGE ENDS

STATION	F.S	B.S	
T AT N°6	5/4 COR SEC 8	N°2	
	1) 17°54'30"		M) 17°54'22.5"
	6) 107°26'15"		
	N°2	N°1	
	1) 17°30'30"		M) 17°30'25"
	6) 105°02'30"		
	N°1	Witness Cor SW COR SEC 4	
	1) 30°16'00"		M) 30°15'55"
	6) 181°35'30"		
	Witness Cor SW COR SEC 4	N°14	
	1) 9°57'20"		M) 9°57'15"
	6) 59°43'30"		
	N°14	A 6-A	
	1) 94°42'45"		M) 94°42'40"
	6) 298°16'00"		
	6) 568°16'00"		
	A 6-A	N°3	
	1) 181°04'30"		M) 181°04'15"
	6) 6°25'30"		
	1086°25'30"		
	N°3	5/4 COR SEC 8	
	1) 8°35'45"		M) 8°35'45"
	6) 51°34'30"		
			360°00'37.5"

STATION	B.S	F.S	
T AT N°5	N°4	N°3	
	1) 15°05'30"		M) 15°05'35"
	6) 90°33'30"		
	N°3	3/4 COR SEC 8	
	1) 12°20'00"		M) 12°19'45"
	6) 73°58'30"		
	3/4 COR SEC 8	N°2	
	1) 42°22'00"		M) 42°21'50"
	6) 254°11'00"		
	N°2	Δ PIN	
	1) 5°21'15"		M) 5°21'15"
	6) 32°07'30"		
	Δ PIN	N°15	
	1) 20°05'00"		M) 20°04'40"
	6) 120°28'00"		
	N°15	Witness Cor NE COR SEC 8	
	1) 20°36'00"		M) 20°36'00"
	6) 123°36'00"		
	Witness Cor NE COR SEC 8	N°14	
	1) 4°51'30"		M) 4°51'25"
	6) 29°08'30"		
	N°14	N°4	
	1) 239°20'30"		M) 239°20'35"
	6) 356°03'30"		
	1436°03'30"		360°00'05"
	W 1/4 COR SEC 8	N°2	
	1) 5°10'15"		M) 5°10'15"
	6) 31°01'30"		



JAN 8, 1951

EL CAPITAN RES  
TRIANGULATION  
OF RANGE END

STATION	B.S.	F.S.
AT A PIN	N <sup>o</sup> 4 1) 16°32' 6) 99°11'30	N <sup>o</sup> 3 M) 16°31'55"
	N <sup>o</sup> 3 1) 67°49'30" 4) 43°56'30" 403°56'30"	N <sup>o</sup> 2 M) 67°19'25"
	N <sup>o</sup> 2 1) 135°06'30" 4) 210°37'30"	N <sup>o</sup> 15 M) 35°06'15"
	N <sup>o</sup> 15 1) 29°10'00" 6) 174°59'30"	N <sup>o</sup> 14 M) 29°09'55"
	N <sup>o</sup> 14 A 6-A 1) 48°18'00" 6) 289°47'30"	M) 48°17'55"
	A 6-A N <sup>o</sup> 5 1) 75°32'00" 6) 93°11'00" 453°11'00"	M) 75°31'50"
	N <sup>o</sup> 5 N <sup>o</sup> 4 1) 88°03'30" 4) 168°20'15" 528°20'15"	M) 88°03'22"  360°00'37"

JAN 9, 1951  
BRIGHT & WARM  
BEATTY  
LEONARD  
WELKER

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STATION	BE	F.S.
AT N <sup>o</sup> 4	S 1/4 COR SEC 8 1) 1°44'45" 6) 10°27'30"	N <sup>o</sup> 3 M) 1°44'35"
	N <sup>o</sup> 3 cont sec	N <sup>o</sup> 2
	N <sup>o</sup> 2 1) 49°33" 6) 297°21'00"	N <sup>o</sup> 15 M) 49°33'30"
	N <sup>o</sup> 15 1) 10°40'30" 6) 64°03'00"	N <sup>o</sup> 14 M) 10°40'30"
	N <sup>o</sup> 14 A PIN 1) 17°07'15" 6) 102°44'00"	M) 17°07'20"
	A PIN A 6-A 1) 7°53'00" 6) 47°18'00"	M) 7°53'00"
	A 6-A N <sup>o</sup> 5 1) 8°56'00" 6) 53°36'00"	M) 8°56'00"
	N <sup>o</sup> 5 SE COR SEC 8 1) 24°12'30" 6) 145°14'00"	M) 24°12'20"
	SE COR SEC 8 S 1/4 COR SEC 8 1) 239°53'00" 6) 359°20'00" 1429°20'00"	M) 239°53'20"
		360°00'35"



JAN. 9, 1951

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EL CAPITAN RES.  
TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.
T AT N°3	N°14	Δ 6-A
	1) 26°18'00"	M) 26°17'45"
	6) 157°46'30"	
	Δ 6-A	N°6
	1) 0°02'30"	M) 0°02'25"
	6) 0°12'30"	
	N°6	A PIN
	1) 0°01'00"	M) 0°01'00"
	6) 0°06'00"	
	A PIN	N°5
	1) 15°22'30"	M) 15°22'30"
	6) 92°15'00"	
	N°5	SE COR SEC 8
	1) 32°31'00"	M) 32°31'05"
	6) 195°06'30"	
	SE COR SEC 8 - N°4	
	1) 38°13'45"	M) 38°13'35"
	6) 229°21'30"	
	N°4	5/8 COR SEC 8
	1) 176°31'30"	M) 176°31'40"
	6) 229°10'00"	
	1039'10'00"	
	5/8 COR SEC 8	N°14
	1) 71°00'30"	M) 71°00'25"
	6) 66°02'15"	
	426°02'15"	
		360°00'25"

NOTE - TRIANGULATION  
CONT'D ON PAGE 76  
THIS BOOK

STATION	B.S.	F.S.
T AT N°2	NOR DAM AXIS	Δ 15-A
	1) 13°05'15"	M) 13°05'15"
	6) 78°31'30"	
	Δ 15-A	N°15
	1) 48°20'00"	M) 48°20'00"
	6) 290°00'00"	
	N°15	N°13
	1) 50°35'30"	M) 50°35'15"
	6) 302°21'30"	
	N°13	Δ 6-B
	1) 6°57'00"	M) 6°56'45"
	6) 41°40'30"	
	Δ 6-B	Δ 6-A
	1) 3°06'00"	M) 3°06'10"
	6) 18°37'00"	
	Δ 6-A	N°6
	1) 1°26'30"	M) 1°26'35"
	6) 8°39'30"	
	N°6	A PIN
	1) 40°50'45"	M) 40°50'35"
	6) 245°03'30"	
	A PIN	N°5
	1) 2°44'30"	M) 2°44'25"
	6) 16°26'30"	
	N°5	SE COR SEC 8
	1) 38°02'30"	M) 38°02'30"
	6) 228°15'00"	
	SE COR SEC 8	NOR DAM AXIS.
	1) 154°52'30"	M) 154°52'30"
	6) 209°15'00"	
	929°15'00"	
		NEAREST? 360°00'00"

Additional 25  
sec page 64







OCT. 14, 1948

LEONARD  
SHIPMAN  
WEST.

66.

EL CAPITAN SPILLWAY SLIDE - INTERSEPTING DITCH.

3+39<sup>04</sup> END OF DITCH. BOULDERS IN GULLY.  
 2+71 GULLY 5' WIDE, 4' DEEP, RUNS OUT AT 2+87.  
 2+50 P.O.T.  
 1+76<sup>21</sup> L. 0° 08' 08" LT. LINE BEARS S 69° 26' 38" E.  
 1+76<sup>21</sup> E.C. " 20° 41' 30" CHORD 4.17  
 1+72<sup>54</sup> " 19° 06'  
 1+62<sup>54</sup> " 15° 16' 45"  
 1+52<sup>54</sup> " 11° 27' 30"  
 1+42<sup>54</sup> " 7° 38' 15"  
 1+32<sup>54</sup> DEFLECTION 3° 49' 15" CHORD 9.99  
 1+22<sup>54</sup> B.C. Δ 41° 23' RT. R=75.0' L=54.17  
 1+22<sup>54</sup> L. 5° 27' 19" RT. BEARING N 69° 18' 30" E  
 0+80 BOULDER 2'x2'x2' ON LINE.  
 0+75 BOULDER 10'x4'x3', 10' LEFT OF LINE.  
 0+62 SMALL BOULDER ON LINE  
 0+50 BOULDER 5'x2'x3' END ON LINE  
 LINE BEARS N 65° 51' 11" E.  
 0+00 HOR. N 47° 01', E 50° 04'

⊗ BOULDERS

○ GULLY OR TRENCH, FLAT ON BOTTOM

LONG CHORD BEARS

DUE EAST FROM

DAM AXIS.

⊗ BOULDER 3'x4'x2' ON N. EDGE OF CL.

⊗ T.P. + ELEV. 959.86

BOULDERS

0+00



OCT. 15, 1948 LEONARD SHIPMAN 67. WEST.

EL CAPITAN SLIDE AREA  
PROFILE OVER PROPOSED INTERCEPTING DITCH.

B.M. IS CHISELED SQUARE ON TOP OF 12'x10'x6'  
BOULDER NEAR N 4700 E 5174.

NOTE: DITCH DROPS 69 FT. IN 200' LENGTH ON  
WEST SIDE OF CREST, AND DROPS 35.6 FT.  
IN 139 FT. IN LENGTH ON EAST SIDE OF CREST  
CREST AT STA. R+00 APPROX.

STA.	+	H. d.	-	ELEV.
R.M.	12.27	996.67		984.40
2+50			9.1	987.6
2+25			4.9	991.8
2+00	CREST		4.0	991.7
1+76 <sup>21</sup>	F.C.		7.6	989.1
1+62 <sup>54</sup>			11.1	985.6
T.P.	+0.19	984.43	-12.48	984.24 <small>Rock.</small>
1+52 <sup>54</sup>			-2.3	982.1
1+42 <sup>54</sup>			-5.5	978.9
1+32 <sup>54</sup>			-9.1	975.3
1+22 <sup>54</sup>	R.C.		-12.8	971.6 <small>Rock.</small>
T.P.	+0.27	972.10	-12.60	971.83 <small>Rock.</small>
1+18			-2.5	969.6
1+00			-9.0	963.1
0+90			-12.5	959.6 <small>Rock.</small>
T.P.	0.09	959.45	-12.74	959.36 <small>Rock.</small>
0+82	} Rock on E		-1.8	957.7
0+79			-3.4	956.1
0+59			-9.8	949.7



## PROFILE OVER DITCH - CONT'D.

		H.I. 959.95		ELEV.
		+	-	
0+56			-10.7	948.8
T.P.	0.81	946.83	-12.83	946.62 Rock
0+48			-2.9	945.9
0+25			-11.2	935.6
T.P.	+0.65	934.68	-12.80	934.03 Rock
0+00			11.0	923.7
R.M.	6.55	990.95		984.40
2+71	TOP OF TRENCH		-9.8	981.2
2+73	BOTTOM OF TRENCH		-13.7	977.3
T.P.	+1.40	980.26	-12.09	978.86 Rock
2+87	END OF TRENCH		-5.0	975.3
2+96			-5.9	974.4
3+00			-9.5	970.8
3+07			-12.3	968.0
3+17			-13.5	966.8
T.P.	+1.26	968.89	-12.63	967.63 Rock
3+29			-5.5	963.4
3+39	END		-11.8	957.1



Profile - Agate St.  
 Farnel - West to Sta. 47+76

69.

	+	T	-	
B.M.	12.92	180.08		167.16 on Fire Plug
12+00			1.3	
T.P.	12.29	191.42	0.95	179.13
12+50			7.4	
Δ 13+00			1.9	
13+07	curb		3.34	Top of curb
13+07			3.91	Bot. of Curb
Δ 13+31 <sup>18</sup>			2.62	
13+47 <sup>38</sup>			2.59	Bot. of curb
13+47 <sup>38</sup>			2.12	Top of curb
ck			2.11	189.31 Spike in Road 189.35
14+00			3.5	
15+00			6.4	
16+00			9.1	
16+09 <sup>25</sup>			8.96	Top of curb
16+09 <sup>25</sup>			9.59	Bot of curb
16+27 <sup>64</sup>			10.18	Bot of curb
16+27 <sup>64</sup>			9.43	Top of curb
T.P.			9.43	181.99



	+	π	-	181.99
15 T.P. on curb	1.02	183.01		
1 17+00			4.5	
7 18+00			9.3	173.7
1 T.P.	0.31	170.78	12.54	170.47
4 19+00			2.5	168.0
20+00			7.5	
21+00			11.3	
Δ T.P.	2.33	160.62	12.49	158.29
21+72 <sup>1</sup>			3.03	Top of curb
21+72 <sup>2</sup>			4.0	Bot. in Dirt road
21+91 <sup>53</sup>			4.5	" " " "
21+91 <sup>53</sup>			4.20	Top of curb
22+00			4.9	
23+00			7.9	
24+00			10.2	
24+50			18.7	158.37 = 158.112
24+69 <sup>95</sup>			10.8	top oil curb
"			11.2	bottom
25+00			11.3	

59.57  
53/2



160.62

25+02

11.7

25+50

9.4

26+00

8.3

TP

7.61

153.01

6.58 159.59

26+50

6.2

27+00

5.6

27+50

5.3

28+00

5.1

28+50

5.2

29+00

4.9

29+50

5.1

30+00

5.7

30+40

6.5

30+50

8.1

30+84

8.6

30+88

7.6

31+00

7.9

ck to B.M.

5.12

154.47

conc man. NW. Cor. Cass + Agate



159.59

31+50

9.1

32+00

10.0

T.P.

9.08 150.51

0.44

150.25

32+50

2.7

33+00

4.2

33+50

6.0

34+00

7.9

34+50

10.1

35+00

13.0

T.P.

12.98 137.97

at sta. 35+00 P.O.T.

2.32

140.29

35+22

4.0

35+22

4.8

35+50

5.5

36+00

6.3

36+21

6.4

17

36+25

7.7

36+27

9.7

8.4

12.3

8



	140.29		
36+50		11.6	
36+60		10.7	
36+67		12.9	
36+77		13.0	
36+84		11.8	
36+88		12.6	
36+91		11.1	
36+96		13.2	
37+00		12.8	
37+12		16.7	
37+50		13.3	
37+76		11.6	
37+85		10.5	
38+00		10.3	
38+50		12.2	
T.P.		12.19	128.10
	0.75	128.85	
39+00		2.6	
39+50		4.0	

14

top

8.7

8.

top

13.2

6



	123.85		
40+00		6.3	
40+50		8.7	
41+00		10.4	
41+50		12.0	
T.P.		11.96	116.89
	1.02	112.91	
41+70		1.6	
41+72		1.3	
42+00		2.8	
42+18		4.4	
42+22		5.7	
42+34		6.0	
42+36		6.4	
42+38		6.0	
42+50		5.9	
42+65		7.1	
42+72		6.5	
42+84		6.3	
42+86		5.1	



	117.91			
43+00		5.6		
43+50		6.9		
44+00		8.1		
44+50		10.0		
45+00		11.8		
45+50		12.8		
T.P.		12.63	105.28	
0.11	105.39			
46+00		1.7		
46+50		3.2		
47+00		5.0		
47+50		6.0		
47+76 1/2 end		7.1		
ck to BM		5.42	99.97	99.84

Conc. man. 58' RT 47+61 1/2



(CONTINUED FROM PAGE 64)

JAN. 9 1951  
BEADY T

JAN 8 1951  
LEONARD T

76

EL CAPITAN RES  
TRIANGULATION  
OF RANGE ENDS

STATION	B.S.	F.S.
T AT N°1	NOR DAM AXIS	N°16
	1) 53°00'00"	M) 52°59'55"
	6) 317°59'30"	
	N°16	A 15-A
	1) 25°26'45"	M) 25°26'40"
	6) 152°40'00"	
	A 15-A	N°15
	1) 23°19'30"	M) 23°19'25"
	6) 139°56'30"	
	N°15	A 6-B
	1) 2°20'00"	M) 2°19'30"
	6) 13°57'00"	
	A 6-B	A 6-A
	1) 4°06'00"	M) 4°05'50"
	6) 24°35'00"	
(LEONARD T)	A 6-A	N°6
	1) 1°21'00"	M) 1°21'15"
	6) 8°07'30"	
	N°6	N°2
	1) 22°44'30"	M) 22°44'35"
	6) 136°27'30"	
	N°2	NOR DAM AXIS
	1) 227°43'30"	M) 227°43'20"
	6) 1366°20'00"	
	N°2	NW COR SEC 8
	1) 30°16'30"	M) 30°16'00"
	6) 181°36'00"	
	NW COR SEC 8 - N°16	
	1) 22°44'00"	M) 22°44'10"
	6) 136°25'00"	

STATION	B.S.	F.S.
T AT W 1/4 COR SEC 8	N°5	N°6
	1) 23°33'	M) 23°33'
	6) 141°18'	
	N°2	N°5
	1) 4°45'	M) 4°44'45"
	6) 28°28'30"	
	NW COR SEC 8	N°16
	1) 19°25'	M) 19°24'40"
	6) 116°28'	
	N°16	N°15
	1) 44°38'	M) 44°37'55"
	6) 267°47'30"	
	N°15	N°6
	1) 9°58'	M) 9°57'30"
	6) 59°45'	
	N°5	NW COR SEC 8
	1) 262°28'	M) 262°27'30"
	6) 1574°45'	
		360°00'35"
T AT NW COR SEC 8 - W 1/4 COR SEC 8	N°1	
	1) 2°38'	M) 2°37'55"
	6) 15°47'30"	
	N°1	S 6 DAM AXIS
	1) 24°27'30"	M) 24°27'15"
	6) 146°43'30"	
	N°1	NOR DAM AXIS
	1) 43°17'30"	M) 43°17'45"
	6) 259°46'30"	

13° 06' 10" = 52°59'55"



EL CADITAN RES.  
TRIANGULATION  
OF RANGE ENDS

JAN 9 1951  
LEONARD T.  
WELKER

STATION	B.S.	F.S.
T AT N <sup>o</sup> R DAM AXIS	S DAM AXIS - N <sup>o</sup> 1	
	1) 35°34'	M) 35°33'55"
	6) 213°23'30"	
N <sup>o</sup> 1 - N <sup>o</sup> 2		
	1) 31°27'	M) 31°27'20"
	6) 188°44'	
N <sup>o</sup> 2 Δ15-A		
	1) 16°24'	M) 16°23'50"
	6) 98°23'	
Δ15-A N <sup>o</sup> 16		
	1) 1°30'	M) 1°30'05"
	6) 9°00'30"	
N <sup>o</sup> 16 NW COR SEC 8		
	1) 57°05'	M) 57°05'10"
	6) 342°31'	
NW COR SEC 8 S <sup>o</sup> DAM AXIS		
	1) 217°59'	M) 217°59'20"
	6) 1307°56'	
		359°59'40"
S <sup>o</sup> DAM AXIS -		
W <sup>1</sup> / <sub>4</sub> COR SEC 8		
	1) 27°10'30"	M) 27°10'10"
	6) 163°01'	

JAN 10, 1951  
BEATTY T.  
LEONARD  
WELKER

11.

STATION	B.S.	F.S.
T AT N <sup>o</sup> 14	N <sup>o</sup> 13 -	N <sup>o</sup> 7
	N <sup>o</sup> 7	Δ6-8
	1) 6°03'45"	
	6) 36°22'30"	M) 6°03'45"
	Δ6-B	Δ6-A
	1) 16°00'45"	
	6) 96°04'30"	M) 16°00'45"
	Δ6-A	N <sup>o</sup> 6
	1) 4°30'00"	
	6) 26°59'30"	M) 4°29'55"
	N <sup>o</sup> 6	N <sup>o</sup> 5
	1) 36°44'30"	
	6) 220°25'30"	M) 36°44'15"
	N <sup>o</sup> 5	ΔPIN
	1) 10°39'	
	6) 62°53'00"	M) 10°38'50"
	ΔPIN	N <sup>o</sup> 4
	1) 14°45'30"	
	6) 88°32'30"	M) 14°45'25"
	N <sup>o</sup> 4	N <sup>o</sup> 3
	1) 7°18'00"	
	6) 43°48'30"	M) 7°18'05"
	N <sup>o</sup> 3	N <sup>o</sup> 13
	1) 248°18'30"	
	6) 49°49'30"	M) 248°18'15"
	1489-49'30"	
		360°00'35"



EL CAPITON RES.  
TRIANGULATION  
OF RANGE ENDS

JAN 10 1951  
RAIN 1:10 PM  
DEATY T

STATION	B.S.	F.S.
T AT N° 15	A 6-A	N° 6
	1) 2° 48' 30"	M) 2° 48' 25"
	6) 16° 50' 30"	
N° 6		N° 5
	1) 44° 29' 00"	M) 44° 28' 45"
	6) 266° 52' 30"	
N° 5		A PIN
	1) 6° 56' 30"	M) 6° 56' 15"
	6) 41° 37' 30"	
A PIN		SE COR SEC 8
	1) 17° 09' 00"	M) 17° 09' 00"
	6) 102° 54' 00"	
SE COR SEC 8		N° 4
	1) 16° 06' 00"	M) 16° 06' 00"
	6) 96° 36' 00"	
N° 4		N° 2
	1) 8° 44' 15"	M) 8° 44' 10"
	6) 52° 25' 00"	
N° 2		W 1/4 COR SEC 8
	1) 66° 58' 30"	M) 66° 58' 30"
	6) 201° 51' 00"	
W 1/4 COR SEC 8		N° 1
	1) 4° 50' 00"	M) 4° 50' 05"
	6) 29° 00' 30"	
N° 1		A 15-A
	1) 18° 46' 00"	M) 18° 46' 05"
	6) 112° 36' 30"	
A 15-A		A 6-A
	1) 173° 13' 30"	M) 173° 13' 25"
	6) 319° 20' 30"	360° 00' 40"
	1039° 20' 30"	

78.

JAN 11 1951  
DEATY T  
LEONARD  
WELKER  
Cold, Rainy & Windy  
& DARK.

STATION	B.S.	F.S.
T AT N° 16	A 15-A	W 1/4 COR SEC 8
	1) 97° 05' 00"	M) 97° 04' 45"
	2) 222° 28' 30"	
	6) 582° 28' 30"	
W 1/4 COR SEC 8		N° 1
	1) 0° 42' 15"	M) 0° 42' 05"
	6) 4° 12' 30"	
N° 1		So DAM AXIS
	1) 33° 54' 30"	M) 33° 54' 30"
	6) 2° 3' 27' 00"	
So DAM AXIS		NOR DAM AXIS
	1) 43° 44' 30"	M) 43° 44' 20"
	6) 262° 26' 00"	
NOR DAM AXIS		A 15-A
	1) 184° 35' 00"	M) 184° 34' 50"
	6) 27° 29' 00"	360° 00' 30"
	1107° 29' 00"	



JAN 11, 1951  
DEATHY T

WINDY!  
RAIN!  
COLD!

LEONARD T

79

EL CAPITAN RES.  
TRIANGULATION  
OF RANGE ENDS

STATION	P.S.	F.S
T AT 15-A	N°15	N°5
	1) 27°09'00"	M) 27°08'30"
	6) 162°51'00"	
	N°5	N°2
	1) 13°57'30"	M) 13°57'15"
	6) 83°43'30"	
	N°2 NW COR SEC 8	
	1) 91°24'15"	M) 91°24'20"
	6) 188°26'00"	
	48°26'00"	
	NW COR SEC 8 N°1	
	1) 5°24'45"	M) 5°24'45"
	6) 32°28'30"	
	N°1 So NW COR SEC 8	
	1) 21°17'30"	M) 21°17'30"
	6) 127°45'30"	
	So. DAM AXIS	NOR DAM AXIS
	1) 32°24'30"	M) 32°24'35"
	6) 194°27'30"	
	NOR DAM AXIS N°16	
	1) 3°04'30"	M) 3°04'35"
	6) 18°27'30"	
	N°16	N°15
	1) 165°19'30"	M) 165°19'30"
	6) 295°57'30"	M) 149°19'35"
	1015°57'30"	
		360° 00' 05"
		364° 01' 05" A.R.
		360° 01' 05"
	N°6	N°5
	1) 29°44'00"	M) 29°43'50"
	6) 178°23'00"	

STATION	P.S	F.S
T AT So. DAM AXIS	N°16 DAM AXIS	NW COR SEC 8
	1) 19°09'00"	M) 19°08'40"
	6) 114°52'00"	
	NW COR SEC 8	N°16
	1) 32°12'00"	M) 32°11'45"
	6) 193°10'20"	
	N°16	Δ 15-A
	1) 12°50'00"	M) 12°49'55"
	6) 76°59'30"	
	Δ 15-A	N°2
	1) 33°02'00"	M) 33°02'00"
	6) 198°12'00"	
	N°2	N°2 DAM AXIS
	1) 262°48'30"	M) 262°48'10"
	6) 136°49'00"	
	6) 1576°49'00"	
		360° 00' 30"



JAN. 10, 1951  
LEONARD T

EL CAPITAN RES.  
TRIANGULATION  
OF RANGE ENDS

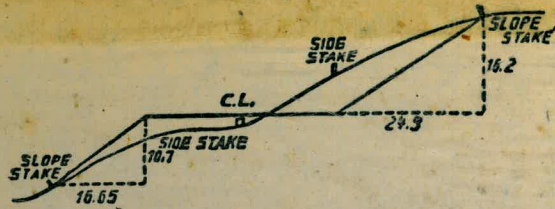
STATION	B.S.	F.S.
T AT N 1/4 COR SEC 8	W 1/4 COR SEC 8	N° 2
	1) 54° 27' 30"	M) 54° 27' 15"
	6) 326° 43' 30"	
	N° 2	N° 5
	1) 34° 09' 00"	
	6) 204° 53' 30"	M) 34° 08' 55"
	N° 5	N° 6
	1) 34° 53' 00"	
	6) 209° 18'	M) 34° 53' 00"
	N° 6	W 1/4 COR SEC 8
	1) 236° 30' 30"	
	6) 339° 04' 30"	M) 236° 30' 45"
	1419° 04' 30"	
		359° 59' 55"
	SEC. 8	
	5/4 COR	W 1/4 COR
	1) 42° 45'	



48.48 @ 30°30' - 0°04'

B-0 211

627.30 = 7432  
 8.60  
 678.70 = 65.72  
 8.60



**DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.**

SLOPE 1 1/2 TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	2
3	4.50	4.65	4.80	4.95	5.10	5.25	5.40	5.55	5.70	5.85	3
4	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7.50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9.00	9.15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10.65	10.80	10.95	11.10	11.25	11.40	11.55	11.70	11.85	7
8	12.00	12.15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13.50	13.65	13.80	13.95	14.10	14.25	14.40	14.55	14.70	14.85	9
10	15.00	15.15	15.30	15.45	15.60	15.75	15.90	16.05	16.20	16.35	10
11	16.50	16.65	16.80	16.95	17.10	17.25	17.40	17.55	17.70	17.85	11
12	18.00	18.15	18.30	18.45	18.60	18.75	18.90	19.05	19.20	19.35	12
13	19.50	19.65	19.80	19.95	20.10	20.25	20.40	20.55	20.70	20.85	13
14	21.00	21.15	21.30	21.45	21.60	21.75	21.90	22.05	22.20	22.35	14
15	22.50	22.65	22.80	22.95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24.15	24.30	24.45	24.60	24.75	24.90	25.05	25.20	25.35	16
17	25.50	25.65	25.80	25.95	26.10	26.25	26.40	26.55	26.70	26.85	17
18	27.00	27.15	27.30	27.45	27.60	27.75	27.90	28.05	28.20	28.35	18
19	28.50	28.65	28.80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30.00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31.50	31.65	31.80	31.95	32.10	32.25	32.40	32.55	32.70	32.85	21
22	33.00	33.15	33.30	33.45	33.60	33.75	33.90	34.05	34.20	34.35	22
23	34.50	34.65	34.80	34.95	35.10	35.25	35.40	35.55	35.70	35.85	23
24	36.00	36.15	36.30	36.45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37.80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39.00	39.15	39.30	39.45	39.60	39.75	39.90	40.05	40.20	40.35	26
27	40.50	40.65	40.80	40.95	41.10	41.25	41.40	41.55	41.70	41.85	27
28	42.00	42.15	42.30	42.45	42.60	42.75	42.90	43.05	43.20	43.35	28
29	43.50	43.65	43.80	43.95	44.10	44.25	44.40	44.55	44.70	44.85	29
30	45.00	45.15	45.30	45.45	45.60	45.75	45.90	46.05	46.20	46.35	30
31	46.50	46.65	46.80	46.95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48.00	48.15	48.30	48.45	48.60	48.75	48.90	49.05	49.20	49.35	32
33	49.50	49.65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51.00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52.50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54.00	54.15	54.30	54.45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55.50	55.65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57.45	57.60	57.75	57.90	58.05	58.20	58.35	38
39	58.50	58.65	58.80	58.95	59.10	59.25	59.40	59.55	59.70	59.85	39
40	60.00	60.15	60.30	60.45	60.60	60.75	60.90	61.05	61.20	61.35	40
41	61.50	61.65	61.80	61.95	62.10	62.25	62.40	62.55	62.70	62.85	41
42	63.00	63.15	63.30	63.45	63.60	63.75	63.90	64.05	64.20	64.35	42
43	64.50	64.65	64.80	64.95	65.10	65.25	65.40	65.55	65.70	65.85	43
44	66.00	66.15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67.50	67.65	67.80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69.00	69.15	69.30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70.65	70.80	70.95	71.10	71.25	71.40	71.55	71.70	71.85	47
48	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73.35	48
49	73.50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

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